TEXTILE TECHNOLOGY DIGEST

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ABSTRACTS

FIBERS A

Natural fibers A1

EQUILIBRIUM MOISTURE CONTENT OF FIBER FLAX. N. R. Brandenburg and J. E. Harmond. U. S. Agri. Research Serv., Washington 25, D. C., in cooperation with the Oregon Agri. Experiment Station. May 1959. 15 p. Tech. bull. 1200. Available from Superintendent of Documents, Washington 25, D. C. 10¢. (2640)

The study included the following flax substances: unretted straw, field-dried retted straw, force-dried retted straw, line fiber, tow fiber, tow yarn, and linen tow fabric. Absorbent cotton and abaca (Manila hemp) were also tested. All these substances were exposed to 9 levels of relative humidity at 80° F, and moisture content was determined at each level. Tables, graphs, photos, 17 refs.

PROGRESSIVE DEGRADATION OF HAIR AND WOOL BY PAPAIN. A. W. Holmes (Unilever Ltd). (Letter to the editor). J. Textile Inst. 50: T422-T423 (June 1959). (2641)

COTTON COUNTS ITS CUSTOMERS: THE QUANTITY OF COTTON CONSUMED IN FINAL USES IN THE UNITED STATES. Revised 1957 and preliminary 1958. Utilization Research Div., National Cotton Council of America, Memphis, Tenn. June 1959. 29 p. Free. (2642)

STICK REMOVER FOR COTTON GINS. G. N. Franks and C. S. Shaw. U. S. Agri. Research Serv., Washington 25, D. C. Mar. 1959. 39 p. Production research report no. 22. Available from Superintendent of Documents, Washington 25, D. C. 25¢. (2643)

COTTON QUALITIES AS AFFECTED BY GINNING. W. E. Chapman, Jr. and V. L. Stedronsky. Cotton Gin and Oil Mill Press 60: 12, 25-26 (May 30, 1959); 10,13-14 (June 13, 1959); 33-35, 38-39 (July 11, 1959); 25-27 (July 25, 1959). (2644)

Test results are presented to show the effects of various ginning treatments on ginning performance, fiber qualities, spinning performance, yarn qualities, bale values, and overall quality indexes for Acala 1517C hand-picked cotton. Photomicrographs, graphs, tables, refs.

FOREIGN AND UNITED STATES UPLAND COTTON: QUALITY COMPARISONS AND EVALUATIONS, 1955 CROP. T. L. W. Bailey, Jr., and R. T. Baggett. U. S. Foreign Agri. Serv., Washington 25, D. C. Apr. 1957. 24 p. FAS-M-14. (2645)

This report compares the fiber and spinning properties of United States upland cotton from the 1955 crop with those of four competing foreign growths and evaluates these properties by a practical method which can be used for establishing the superiority of one cotton over another. In most of the comparisons, the United States cotton had a higher overall quality index than the foreign growths. Its high rank in the overall quality rating resulted from a combination of desirable characteristics rather than from superiority in any one.

MOISTURE REGAIN OF SPECIALTY HAIR AND FUR FIBERS. W. von Bergen (J. P. Stevens & Co.). Textile Research J. 29: 586-588 (July 1959). (2646)

The moisture adsorptive and desorptive powers of the specialty hair fibers are remarkably similar to wool. The same hysteresis exists in the moisture content of mohair, cashmere, alpaca, vicuna, and camel hair fibers between adsorptive and desorptive conditions. The moisture regain of fur fibers such as rabbit, beaver, and muskrat is approximately 2% lower than for wool and the specialty hair fibers. At 65% rh and 70° F the average moisture regain of the specialty hair fibers is about 15%; that for the fur fibers is 13%. Tables, 3 refs.

SOME MECHANICAL PROPERTIES OF SINGLE WOOL FIBERS IN D_2O. M. Feughelman, A. R. Haly, and T. W. Mitchell (Wool Textile Research Labs., CSIRO, Australia). Textile Research J. 29: 564-567 (July 1959). (2647)

Both the load-extension and the stress-relaxation curves were compared in the yield region for single wool fibers in water and in deuterium oxide. Also a comparison was made of the rate of penetration of water and deuterium oxide fronts into a dry fiber. In all cases the deuterium oxide acts in the wool fiber the same as water with the temperature of the fiber reduced by about 5-6° C. Diagr, graphs, 5 refs.

COTTONS OF THE WORLD. A. Sattar. Pakistan Cottons 3: 54-79 (Apr. 1959). (2648)

Chapter 3. Comparison of the fiber properties of world cottons. Chapter 4. Relationship between fiber properties and processing performance of cottons. Graphs, tables.

FIBERS TODAY. PART 3. COTTON: CONSTITUTION, PROPERTIES, AND USES. J. W. S. Hearle. Textile Mfr. 85: 257-261 (June 1959). (2649)

Cotton chemical composition, fiber characteristics, chemical modification, and uses are summarized. Photos, photomicrographs, diagrs, graphs, tables, 3 refs.

COTTON IN RUSSIA. L. A. Mobley. National Cotton Council, P. O. Box 9905, Memphis 12, Tenn. 1959. 31 p. 50¢. (2650)

A study of the trends and prospects of the production and distribution of cotton in the U. S. S. R.

COTTON IN THE WORK CLOTHING INDUSTRY. C. W. Russell. Utilization Research Div., National Cotton Council of America, Memphis, Tenn. June 1959. 30 p. (2651)

KINETIC STUDY OF THE SUPERCONTRACTION OF WOOL FIBERS IN SOLUTIONS OF SALTS, ACIDS, AND ALKALIES. W. G. Crewther and L. M. Dowling (Wool Research Labs., CSIRO, Australia). Textile Research J. 29: 541-549 (July 1959). (2652)

Wool fibers contract in hot solutions of acids or alkalies, the initial rate of contraction increasing with increasing concentration of the acid or alkali. At the higher concentrations contraction is followed by elongation of the fibers to lengths which may exceed the original length. The maximum contraction obtained decreases with increasing concentration of acid or alkali used. Graphs, 21 refs.

Manmade fibers A2

STRUCTURE-PROPERTY RELATIONSHIPS IN SYNTHETIC FIBERS. PART 1. STRUCTURE AS REVEALED BY SONIC OBSERVATIONS. W. H. Charch and W. W. Moseley, Jr. (E. I. du Pont de Nemours & Co.). Textile Research J. 29: 525-535 (July 1959). (2653)

Sonic phenomena as a research tool related to both physical and chemical constitution of synthetic fibers. Diagrs, graphs, tables, 2 refs.

STRUCTURE-PROPERTY RELATIONSHIPS IN SYNTHETIC FIBERS. PART 2. ELASTOMERIC CONDENSATION BLOCK COPOLYMERS. W. H. Charch and J. C. Shivers (E. I. du Pont de Nemours & Co.). Textile Research J. 29: 536-540 (July 1959). (2654)

Elastomeric materials based on condensation block copolymers are examined to see the effects of chemical structure on long-range elastic properties. Graphs, tables, 5 refs.

SARAN USES. L. V. Jones (Saran Yarns Corp.). Am. Textile Reptr. 73: 43, 45 (July 16, 1959). (2655)

Developments in the use of Saran yarns for upholstery, draperies, slip covers, and carpets are outlined.

PROCESSING POINTERS FOR RHOVYL FIBERS. Am. Textile Reptr. 73: 89-90 (July 16, 1959). (2656)

FIBER 40. Am. Viscose Corp. Am. Textile Reptr. 73: 87-88, 94 (July 16, 1959). (2657)

The characteristics of Fiber 40 are briefly noted, and recommendations for its processing are given. Fiber 40 is a new form of cellulosic fiber with built-in shrink resistant properties as low as 2% after repeated launderings.

EFFECTS OF SPINNING METHODS UPON THE CREEP AND OTHER MECHANICAL PROPERTIES OF VISCOSE RAYON. PART 2. EFFECTS OF DEGREE OF FINENESS OF FILAMENTS. Y. Yamaguchi. J. Textile Machy. Soc. Japan 11, No. 11: 17-20 (Nov. 1958). In Japanese (English summary). (2658)

KODEL FIBER PROPERTIES AND PROCESSING. Tennessee Eastman Co. Am. Textile Reptr. 73: 47, 49 (July 16, 1959). (2659)

Data on processing of Kodel on the cotton system and on dyeing and finishing techniques are given. The properties of the fiber in blends with wool, cotton, and rayon are noted.

TWO NEW ORLON PRODUCTS FOR COTTON AND WOOLEN SYSTEMS. R. S. Smith (E. I. du Pont de Nemours & Co.). Am. Textile Reptr. 73: 83, 85, 97 (July 16, 1959). (2660)

The properties and processing of Orlon 25 and Orlon 39, specifically designed for the cotton and woolen systems respectively, are described.

TECHNICAL AND PRODUCTION DATA OF PRINCIPAL SYNTHETIC FIBERS AND METALLIC AND TEXTURED YARNS PRODUCED IN THE UNITED STATES. Am. Textile Reptr. 73: 55-81 (July 16, 1959). (2661)

This 1959 revision is presented in three sections: (1) technical and production data on principal synthetic fibers, (2) facts on leading metallic yarns for use by weavers and designers, and (3) facts about stretch and bulk yarns. Names and addresses of manufacturers and licensees are given. Reprints are available from America's Textile Reporter, 286 Congress Street, Boston 10, Mass., at 50¢ each.

YARN PRODUCTION B

SYNTHETIC AND NATURAL FIBER AND YARN PROCESSING AIDS. C. H. Lighthipe and R. G. Schaubhut (Nopco Chem. Co.). Am. Dyestuff Reptr. 48: 31-36 (June 29, 1959). (2662)

A survey of why fiber processing aids are necessary, what they do, how their performance is measured, and specific application areas. Photos, tables.

WHY MODERNIZE SPINNING? R. R. Miller (Dixon Corp.). Textile Bull. 85: 51-52, 57-59, 80 (June 1959). (2663)

The cost and quality advantages resulting from machinery changeovers are discussed, and Dixon installations at two mills are described. Photos, diagr, graph.

SOME EXPERIMENTS ON THE BEHAVIOR OF FIBERS IN DRAFTING. PART 1. M. Tabata. J. Textile Machy. Soc. Japan 11, No. 3: 21-26 (1958). In Japanese (English summary). Through BCIRA 38: 1736 (1958). (2664)

Spun rayon slivers blended with dyed fine cotton yarn cut in small pieces, as a tracer, were drafted between two pairs of rollers and the behavior of the dyed yarn was recorded on 16 mm ciné-film. Examination of the film indicates that there are 10 types of movement of fibers during drafting. About 60% of fibers when drafting third-head drawframe sliver, and 10-20% when drafting card sliver, change their speed instantaneously from back roller to front roller surface speed. Most of the rest are accelerated gradually, but the well-straightened fibers of length nearly equal to the ratch length change their speed instantaneously. The fibers change their shape during drafting and become more straight. Some fibers adhere to each other and move together during drafting.

SOME EXPERIMENTS ON THE BEHAVIOR OF FIBERS IN DRAFTING. PART 2. DISTRIBUTION OF THE CHANGE POINTS. M. Tabata. J. Textile Machy. Soc. Japan 11, No. 8: 6-13 (1958). In Japanese (English summary). Through BCIRA 38: 4010 (1958). (2665)

It is assumed that, in drafting, a fiber changes its speed from that of the back roller to the front roller speed when its leading end reaches the change point; the irregularity of drafted materials is related to the variation of the position of the change point between fibers. Experiments have been made to determine the distribution of the change points; the method is that of Grishin but differs in mathematical treatment. In cotton slubbing and spinning the distribution is normal for ordinary draft and roller setting. The standard deviations of the position of the change point are 2-3 mm for cotton spinning and 5-10 mm for cotton slubbing. In spinning, these values increase with decrease of draft and increase of roller setting. With equal roller setting, the distance between the mean position of the change point and the front roller nip decreases with increase of fiber length. The variance of the position of the change point increases in the slubbing process, however, though it does not vary much with increase of fiber length in the spinning process.

SOME EXPERIMENTS ON THE BEHAVIOR OF FIBERS IN DRAFTING. PART 3. NUMBER OF FIBERS IN A GROUP. M. Tabata. J. Textile Machy. Soc. Japan 11, No. 10: 9-11 (1958). In Japanese (English summary). Through BCIRA 38: 4927 (1958). (2666)

In drafting, some fibers move together in a group. If K is the number of fibers in a group, $\overline{K}$ is the mean of K, and $C^2(K)$ is the relative variance of K, then, as has been shown previously, the irregularity of sliver, roving or yarn increases with an increase in the value of $\overline{K}[1 + C^2(K)]$. Experiments were made with slivers and rovings dyed about 1 mm in length before drafting. The rovings or yarns produced were examined with a microscope. $\overline{K}$ was about 3 in cotton slubbing, 2 in cotton spinning, and 1.8 in Fibro spinning; $\overline{K}[1 + C^2(K)]$ was 4-5 in cotton slubbing, and 2/3 in cotton spinning and Fibro spinning (draft and roller setting had little influence). Frequency distribution curves of K were similar to Poisson's distribution, the mean of which was $(\overline{K} - 1)$.

FT STRETCH YARN MACHINE. Whitin Mach. Works. Whitin Rev. 26: 9-11 (June 1959). (2667)

The FT machine has 216 spindles. It inserts false twist in filament yarns and heat sets the yarns while in a crimped condition before the release of the false twist. Its features are noted. Photos.

ACTUAL VERSUS NOMINAL YARN COUNT. H. Rehman (Pakistan Inst. of Cotton Research & Technol.). Pakistan Cottons 3: 40-43 (Apr. 1959). (2668)

Brief survey of sources of yarn irregularity. 10 refs.

Opening, picking, fiber preparation B1

AERODYNAMIC STUDY OF THE COTTON TUFT IN OPENING ROOM MACHINERY. PART 1. FLYING MOTION OF THE COTTON TUFT IN AIR FLOW. K. Higuchi. J. Textile Machy. Soc. Japan 11, No. 7: 9-17 (July 1958). In Japanese (English summary). Through BCIRA 38: 3494 (1958). (2669)

The equation of free falling of cotton tufts was found from the equilibrium of weight and air resistance; the terminal velocity, falling distance, velocity and acceleration of a tuft were calculated. The motion of a tuft in vertical or horizontal air flow, and sliding on the floor, was studied; the motion in circular or spiral air flow was derived.

AERODYNAMIC STUDY ON THE MOTION OF COTTON TUFTS IN OPENING ROOM MACHINERY. PART 2. DISPERSION OF COTTON TUFTS IN AIR FLOW. K. Higuchi. J. Textile Machy. Soc. Japan 11, No. 8: 14-20 (1958). In Japanese (English summary). Through BCIRA 38: 4006 (1958). (2670)

The movement of cotton tufts beaten by beaters and conveyed by air flow has been analyzed as a dispersion caused by the throw-out motion to horizontal air flow. The dispersion at the time of free falling is proportional to the variance of the terminal velocity of the tufts. If horizontal throw-out and air flow action are used at the same time, the distribution of tufts will be even.

AERODYNAMIC STUDY OF COTTON TUFTS IN OPENING ROOM MACHINERY. PART 3. PRESSURE DROP IN PNEUMATIC CONVEYING AND THE HEAPED UP LAYER OF COTTON TUFTS. K. Higuchi. J. Textile Machy. Soc. Japan 11, No. 11: 11-16 (Nov. 1958). In Japanese (English summary). Through BCIRA 39: 46 (1959). (2671)

The pressure drive of the air flow duct on a pneumatic conveyor is proportional to the weight of cotton tufts conveyed. The air flow resistance, or pressure drop, of packed cotton tufts, or a heaped-up layer, is proportional to the weight of the tufts, the air flow velocity, and the density of the layer.

IMPROVED AXI-FEED ATTACHMENT. Whitin Mach. Works. Whitin Rev. 26: 24-26 (June 1959). (2672)

The improvements made on the Whitin axi-feed are summarized. They result in substantially improved dirt extraction and cleaning efficiency, simpler adjustments, and maintenance. Photos, diagr.

A STUDY ON THE DEGREE OF COTTON OPENING. M. Kato and K. Yoshida. J. Textile Machy. Soc. Japan 11, No. 9: 30-35 (1958). In Japanese (English summary). Through BCIRA 38: 4717 (1958). (2673)

The degree of breaking (from weight of tufts) and the degree of loosening (from the apparent specific volume of tufts) has been measured for each machine in the opening process.

STUDIES ON PICKERS. PART 3. THE OPENING ACTION OF EACH BEATER. Y. Narumi. J. Textile Machy. Soc. Japan 10, No. 11: 8-15 (1957). In Japanese (English summary). Through BCIRA 38: 652 (1958). (2674)

The efficiency of cotton opening effected by the mechanical action of the beaters was evaluated from the extent of breaking up and loosening of cotton tufts measured by a new method.

STUDIES ON PICKERS. PART 4. ON THE CLEANING ACTION IN THE EXISTING PICKER AND A NEW TYPE. Y. Narumi. J. Textile Machy. Soc. Japan 11, No. 3: 27-33 (1958). In Japanese (English summary). Through BCIRA 38: 1725 (1958). (2675)

Experiments have been made on existing and new-type pickers, with various driving operations, and the wastes from the different cleaning mechanisms examined.

STUDIES ON THE PICKER. PART 5. ON THE CLEANING ACTION (2). Y. Narumi. J. Textile Machy. Soc. Japan 11, No. 4: 13-19 (1958). In Japanese (English summary). Through BCIRA 38: 2398 (1958). (2676)

L_p and I_p are used to indicate the percentage weight of lint and percentage weight of waste, respectively, to the weight of lap fed. Results show that (1) the values of L_p/I_p of the waste in the dust box and dust room of the bladed-beater picker were less than those of the Kirschner beater, (2) the values of L_p/I_p of the waste under the Kirschner beater were less than those under the bladed-beater, (3) the values of L_p/I_p of the total waste of the bladed-beater picker were less than those of the Kirschner-beater-picker.

STUDIES ON PICKERS. PART 6. ON THE CLEANING ACTION OF PICKERS OF VARIOUS TYPES. Y. Narumi. J. Textile Machy. Soc. Japan 11, No. 6: 14-20 (1958). In Japanese (English summary). Through BCIRA 38: 3295 (1958). (2677)

Percentage lint and dust in the waste extracted by the new-type picker were determined and a general rule for cleaning efficiency found: $\epsilon = k\tau^n$, where ϵ is the percentage of cleaning, τ is the ratio of lint loss to quantity of cotton fed, k is the coefficient of cleaning efficiency, a constant dependent on the picker mechanism, and n is a constant, but dependent on the kind of cotton.

STUDIES ON THE PICKER. PART 7. BEHAVIOR OF FIBER LENGTH BREAKAGE BY DIFFERENT BEATERS. Y. Narumi. J. Textile Machy. Soc. Japan 11, No. 8: 29-33 (1958). In Japanese (English summary). Through BCIRA 38: 4007 (1958). (2678)

By measuring fiber-number distribution the author has tried to ascertain the amount of fiber breakage caused by each beater.

Carding and combing B2

TIPS ON THE CARE AND OPERATION OF FANCIES. W. J. Crofts. Textile Inds. 123: 81-85 (July 1959). (2679)

The cheeking and setting of fancies, causes of winding, the function of the draft roll under the fancy, and fancy speeds, covers, clothing, and grinding are discussed. Diagrs.

APPLICATION OF METALLIC CARD CLOTHING TO COTTON PROCESSING. PART 3. EFFECTS OF LAP FEEDING RATE. C. Nozaki, Y. Mineo, K. Ando, and H. Kimura. J. Textile Machy. Soc. Japan 11, No. 10: 20-26 (1958). In Japanese (English summary). Through BCIRA 38: 4925 (1958). (2680)

A metallic card was fed with cotton laps for 20s yarn at rates ranging from 12.6 to 59.1 lb/hr. Web delivery increased with feeding rate (decrease in lickerin fly). Neps increased proportionally with feeding rate up to 20 lb/hr and then more rapidly. More than half the total trash was removed from the lickerin fly and only a small fraction by the flat strips at the regular feeding rate; the amount of trash in the web was little affected by feeding rate. Fiber breakage was small at the regular feeding rate and short fiber was removed as waste, but at higher rates the breakage increased and there was less selective removal of short fiber.

GRAF-OPTIMA SLUBBING EVENER. Graf & Co. Swiss Tech. No. 1: 46 (1959). (2681)

The Graf-Optima sliver-autoleveller evens out short and long period fluctuations in card sliver.

Drawing and roving B3

RINGFRAME DRAFTING MECHANISM: PENDULUM WEIGHTING ARMS AND TOP ROLLERS. Skefko Ball Bearing Co. Ltd. Textile Mfr. 85: 279-282 (June 1959). (2682)

The principles embodied in the SKF pendulum weighting arms and their construction and application are described. Photos, diagrs.

STUDIES ON THE FRICTOR. PART 1. K. Mihira and H. Takeda. J. Textile Machy. Soc. Japan 11, No. 10: 1-8 (1958). In Japanese (English summary). Through BCIRA 38: 4928 (1958). (2683)

A "frictor" is a tube of the trumpet type for controlling a bundle of fibers. Sliver was drawn, without fiber slippage, through various forms of frictor and the static drawing force was measured by means of a magnetic strain meter. There is a linear relationship between weight of sliver and static drawing force.

Spinning, winding, twisting B4

TWIST INSERTION IN RING SPINNING AND DOUBLING. W. F. du Bois and D. F. van de Riet. Reply: H. Catling and A. E. De Barr. (Letters to the editor). J. Textile Inst. 50: T423-T424 (June 1959). (2684)

Letter and reply.

WHAT DO YOU KNOW ABOUT TRAVELERS? Carter Traveler Co. Textile Bull. 85: 60-61 (June 1959). (2685)

The production of travelers at Carter Traveler Co. is described and illustrated.

CONTRIBUTION TO THE STUDY OF PERIODIC IRREGULARITIES IN HIGH-DRAFT WORSTED YARNS. R. Audivert, D. M. Hannah, W. J. Onions, and P. P. Townend (Leeds Univ.). (Letter to the editor). J. Textile Inst. 50: T418-T422 (June 1959). (2686)

The amplitude of periodic variation originating from defective front rollers in Ambler superdraft spinning increased with draft and decreased with mean fiber length, as expected from theory, and depended on the number of fiber ends/mm in the roving. Graphs, tables, 7 refs.

NOMOGRAM FOR FINDING TRAVELER WEIGHT NEEDED FOR YARN CHANGE. S. D. George (Intern. Eng. Associates). Textile Inds. 123: 105-106 (July 1959). (2687)

CHANGEOVER IN WHITIN-SCHWEITER FILLING BOBBIN WINDERS. Whitin Rev. 26: 52-54 (June 1959). (2688)

Newly designed parts for the pick motion and for changing to variable layer lock action are described. Photos.

CASABLANCAS BOBBIN HOLDER. Whitin Mach. Works. Whitin Rev. 26: 48-51 (June 1959). (2689)

Features are described and illustrated. Diagr.

IMPROVED DOFFING SKIP. C. S. Rao Sahib. Textile Dig. 20: 21-22 (Jan.-Mar. 1959). (2690)

Describes a new skip which permits the doffer to use both hands for doffing and eliminates sorting out. Diagrs.

WEAR OF SPINNING SPINDLES. Y. Iwata. J. Textile Machy. Soc. Japan 11, No. 9: 1-7 (1958). In Japanese (English summary). Through BCIRA 38: 4726 (1958). (2691)

The influence of number of rotations, load, speed and hardness on wear at the footstep was studied (1) with a flat plate and balls, and (2) with a spindle. Load had a smaller effect but wear increased rapidly with decrease in rotational speed. If a step with a well-finished surface and a surface hardness higher than normal is used, the wear of the spindle pivot is lessened.

COMB SPINNING. M. Izutsu, K. Nakamura, and A. Mihara. J. Textile Machy. Soc. Japan 11, No. 7: 18-23 (July 1958). In Japanese (English summary). Through BCIRA 38: 3500 (1958). (2692)

The performance of test apparatus was studied by instantaneous photography in the laboratory. The relation between number of revolutions of the spinning head and scattering of fibers was investigated; there is a critical speed. The draft limit was also examined and improvements to the apparatus suggested.

STUDIES ON RATIONALIZATION OF CLEANING IN SPINNING MILLS. PART 1. CRITICAL VELOCITY OF TUFTS ON THE FLOOR. K. Niitsu, S. Fujimori, and Y. Hosokawa. J. Textile Machy. Soc. Japan 11, No. 1: 27-31 (1958). In Japanese (English summary). Summary in BCIRA 38: 1309 (1958). (2693)

Critical and terminal velocities of simple-form cotton tufts were measured.

STUDIES ON RATIONALIZATION OF THE CLEANING METHOD IN SPINNING MILLS. PART 2. ANALYTICAL RESEARCHES ON CHARACTERISTICS OF THE SUCTION NOZZLE. Y. Niitsu, S. Fujimori, and Y. Hosokawa. J. Textile Machy. Soc. Japan 11, No. 5: 7-14 (1958). In Japanese (English summary). Through BCIRA 38: 2599 (1958). (2694)

The state of the air flow between the suction nozzle and the floor was analyzed, considering it as a 2-dimensional potential flow. When the ratio of the height of the nozzle from the floor to the width of the nozzle is larger than 1, the velocity distributions of air flow along the floor are almost similar. To make the velocity of air flow high in a small region on the floor, a nozzle, the axis of which is inclined as much as possible to the floor surface, and the end plane of which is parallel with the floor surface, should be selected. When a nozzle with the end plane inclined as much as 60° to its axis is set vertically to the floor surface, a wide region of the floor on one side of the nozzle is covered with an air flow of high velocity.

STUDIES ON RATIONALIZATION OF THE CLEANING METHOD IN SPINNING MILLS. PART 3. RELATION BETWEEN PERFORMANCE AND DIVERGING ANGLE OF NOZZLE. Y. Niitsu, S. Fujimori, and Y. Hosokawa. J. Textile Machy. Soc. Japan 11, No. 6: 9-13 (1958). In Japanese (English summary). Through BCIRA 38: 3300 (1958). (2695)

The nozzles used for collecting cotton fly, etc., scattered on the floor usually have a diverging throat. The diverging angle should be such that the negative pressure is distributed over a wide area of the floor as uniformly as possible. The static pressure distribution is the most important factor for the good performance of the suction nozzle when it works on the floor. In order to get uniform pressure distribution (1) the rate of air flow through the nozzle should be as small as possible, (2) the diverging angle of the nozzle should be less than 60°, (3) the diverging angle of a nozzle with rounded throat should be less than 30°.

STUDIES ON RATIONALIZATION OF CLEANING METHOD IN SPINNING MILLS. PART 4. EXPERIMENTAL RESEARCH ON CHARACTERISTICS OF THE SUCTION NOZZLE. Y. Niitsu, S. Fujimori, and Y. Hosokawa. J. Textile Machy. Soc. Japan 11, No. 10: 12-19 (1958). In Japanese (English summary). Through BCIRA 38: 4929 (1958). (2696)

The theoretical analysis has been confirmed experimentally by experiments of sand-grain sucking.

COTTON RING SPINNING. G. R. Merrill. 1959. 174 p. Available from Gilbert R. Merrill, 364 Varnum Ave., Lowell, Mass. $3.75. (2697)

A study book for the beginner.

WOOLEN MULE: STUDY OF THE DRAWING-OUT SCROLL. J. A. B. Mitchell. Textile Mfr. 85: 269-271 (June 1959). (2698)

The effects of scroll setting and speed on drafting, carriage movement, and roller delivery are examined. Diagr, graphs.

FUNDAMENTALS OF SPINNING RING DEVELOPMENT. PART 4. NEW WHITIN RINGS AND THEIR PERFORMANCE. P. F. Grishin. Whitin Rev. 26: 31-47 (June 1959). (2699)

The two major ring problems encountered in the mill, traveler burn and yarn trapping between ring and traveler, and their solution by means of Kryton rings are discussed. Diagrs, graph, tables, 4 refs.

Yarns B5

A THEORY OF STRUCTURE OF SLIVERS. PART 1. AN EXPRESSION FOR STRUCTURE OF SLIVERS. M. Tabata and S. Ishikawa. J. Textile Machy. Soc. Japan 11, No. 7: 4-8 (July 1958). In Japanese (English summary). (2700)

The author defines the density of the leading end of groups of fibers and formulates this as a sum of a random variance and compound harmonic oscillations. From the equation and the frequency distribution of the number of fibers in a group, the numbers of leading ends of fibers and fiber groups between x and x + y, where x is the distance measured parallel to the sliver axis, were formulated and their variances were calculated. The irregularity of slivers can be more completely shown by these variances than by the variance of thickness.

A THEORY ON STRUCTURE OF SLIVERS. PART 2. IRREGULARITY IN THICKNESS AND WEIGHT OF SLIVER. M. Tabata and S. Ishikawa. J. Textile Machy. Soc. Japan 11, No. 9: 17-26 (1958). In Japanese (English summary). Through BCIRA 38: 4723 (1958). (2701)

The relation between the arrangement of fiber leading ends and the irregularity of sliver is studied theoretically. Equations are given.

A THEORY ON STRUCTURE OF SLIVERS. PART 3. EXPERIMENTAL STUDIES. M. Tabata and S. Ishikawa. J. Textile Machy. Soc. Japan 11, No. 11: 1-10 (Nov. 1958). In Japanese (English summary). Through BCIRA 39: 50 (1959). (2702)

The relation between the arrangement of the fiber leading ends and the variation of thickness of slivers has been studied. For ordinary purposes the variation of the distribution of fiber lengths along the sliver length may be neglected. The theoretical conclusions are confirmed.

ON THE TENSILE STRENGTH OF NYLON-VISCOSE BLENDED YARN. S. Manago and H. Kuma. J. Textile Machy. Soc. Japan 11, No. 7: 24-28 (July 1958). In Japanese (English summary). (2703)

The percentage of broken fibers was a maximum (90%) at the optimum twist. The fiber strength utilized in the blended yarn was 97% at the optimum twist.

ON THE CHANGE OF THE PROPERTIES OF YARN BY TWISTING. PART 1. TWISTING AND GLOSS OF YARN. K. Furusato. J. Textile Machy. Soc. Japan 11, No. 6: 26-28 (1958). In Japanese (English summary). Through BCIRA 38: 3414 (1958). (2704)

Cotton and nylon yarns were examined. Increase in twist produces a reduction in contrast gloss, but the change is smaller for cotton. The relative position of the incident light makes a difference; the contrast gloss is generally higher when the incident light is parallel rather than perpendicular to the yarn axis. The maximum reflected light for cotton yarn is observed at a greater reflection angle than the normal reflection angle.

ON THE CHANGE IN THE PROPERTIES OF THREADS BY TWISTING. PART 2. TWISTING AND THE COEFFICIENT OF DYNAMIC FRICTION. K. Furusato. J. Textile Machy. Soc. Japan 11, No. 9: 27-29 (1958). In Japanese (English summary). Through BCIRA 38: 4813 (1958). (2705)

The threads (cotton and nylon) were wrapped round a plate and examined as part of the vibration system of a pendulum when in contact with another plate. With parallel wrappings the coefficient of friction (μ) decreased with number of twists, but with wrappings at right angles it increased; for nylon $\mu = 0.1\text{-}0.2$, for cotton $\mu = 1.2\text{-}1.3$.

RECENT ADVANCES IN TIRE YARNS. D. Entwistle, J. P. Jones, and G. A. Pittman. Courtaulds Ltd, Coventry, England. Dec. 1958. 15 p. Free. (2706)

Tire yarns, Tenasco high tenacity viscose rayon in particular, are discussed under the headings: progress in rayon cord strength, mechanical properties, phenomena of textile fatigue in rubber, and use of rayon in nonconventional tires.

EFFECT OF DRAFTING ON THE DEGREE OF FIBER ORIENTATION. PART 1. K. Fujino and W. Itani. J. Textile Machy. Soc. Japan 11, No. 8: 21-28 (1958). In Japanese (English summary). Through BCIRA 38: 4009 (1958). (2707)

The directional distribution of the effective segments of fibers in sliver is assumed to be represented by a deformed condition of the medium in ideal sliver having a simple construction. The degree of fiber orientation is expressed by a formula.

EFFECT OF DRAFTING ON THE DEGREE OF FIBER ORIENTATION. PART 2. K. Fujino and Y. Itani. J. Textile Machy. Soc. Japan 11, No. 9: 8-16 (1958). In Japanese (English summary). Through BCIRA 38: 4724 (1958). (2708)

Theoretical equations are derived and related to the tension-degree of orientation curves of cotton and rayon staple slivers. The tensile strength of sliver is nearly proportional to the effective tension calculated from the degree of fiber orientation of each segment of sliver.

SPACE DENSITY OF FIBERS IN IDEALIZED SINGLES YARN. M. M. Platt, W. G. Klein, and W. J. Hamburger (Fabric Research Labs.). (Letter to the editor). Textile Research J. 29: 592-593 (July 1959). (2709)

NYLON REINFORCED WORSTED YARN. Brit. Nylon Spinners Ltd. Textile Merc. 140: 850-851 (June 26, 1959). (2710)

The advantages of the use of continuous filament yarn as a reinforcement for worsted yarn are cited, and the characteristics of folded and core reinforced yarns and of the fabrics produced from them are described.

STUDY ON THE TENSION OF INTERNAL FRICTION OF DIFFERENT THREADS BY LONGITUDINAL PULSE WAVE. M. Suematsu. J. Textile Machy. Soc. Japan 11, No. 8: 34-38 (1958). In Japanese (English summary). Through BCIRA 38: 4123 (1958). (2711)

The internal friction of different yarns (raw and degummed silk, spun rayon, wool) was measured by the free-damping longitudinal pulse wave method and by the method of wave velocity of longitudinal pulse wave under tension. The load-wave velocity curve increases, and the load-wave damping factor decreases, with increase of tension.

STUDIES OF CREPE YARN. Part 2. ON THE TWISTED YARN STRUCTURE. I. Gemma, T. Miyasaka, and Y. Fukushima. J. Textile Machy. Soc. Japan 11, No. 7: 29-34 (July 1958). In Japanese (English summary). Through BCIRA 38: 3593 (1958). (2712)

In twisted yarns the strained filaments migrate to minimize the strain and the yarn structure deviates from the ideal helical structure. The effects of change of yarn denier, number of filaments, yarn tension during twisting, and coefficient of friction between filaments on the degree of deviation were examined.

FABRIC PRODUCTION C

Weaving C2

TEMPLE ROLLS. Textile Inds. 123: 78-80 (July 1959). (2713)

Various types of temple rolls and their applications are described and illustrated. Photos.

LOW-BUILT WORSTED LOOM. George Hattersley & Sons Ltd. Textile Merc. 141: 10-11 (July 3, 1959). (2714)

The new loom features the Shirley dobby and is available as a 4 x 1 box automatic pirn changer readily convertible to a 4 x 4 pick-at-will version.

RESEARCH ON THE MOTION OF THE SHUTTLE OF THE POWER LOOM WHEN THE SHUTTLE ENTERS THE SHUTTLE BOX AND IS STOPPED AT THE BOX END. H. Kamogawa. J. Textile Machy. Soc. Japan 11, No. 8: 1-5 (1958). In Japanese (English summary). Through BCIRA 38: 4036 (1958). (2715)

The wear of the picker, shuttle, stick, and check strap ("buffer band") occurs mainly at the moment the shuttle collides with the picker. The swell is snapped out from the shuttle box at the moment the shuttle meets it, so the checking effect of the swell on the running shuttle is not so large as expected. For checking, the "oil-buffer" is more useful than the hide-buffer.

A SURVEY OF RESEARCH WORK ON LOOMS IN JAPAN. H. Noshi and T. Ishida. J. Textile Machy. Soc. Japan 11, No. 9: 40-47 (1958). In Japanese. Through BCIRA 38: 4740 (1958). (2716)

This review has 87 references.

STUDIES ON THE PICKING MOTION FOR HIGH SPEED POWER LOOMS. PART 1. E. Kuze. J. Textile Machy. Soc. Japan 10, No. 11: 24-36 (1957). In Japanese (English summary). Through BCIRA 38: 695 (1958). (2717)

The relative motion of shuttle and swell and the effect of their shape and material on the duration of their contact are examined, and the most important factors for retarding and stopping the shuttle smoothly within a limited time are investigated to obtain data for the design of a retarding device for high-speed shuttles.

STUDIES ON THE PICKING MOTION ON THE HIGH SPEED POWER LOOMS. PART 2. ON THE TRANSFORMATION OF THE WEFT YARN LAYER DURING ACCELERATION AND DECELERATION. E. Kuze. J. Textile Machy. Soc. Japan 11, No. 1: 43-46 (1958). In Japanese (English summary). Through BCIRA 38: 1338 (1958). (2718)

The weft yarn tends to displace on the weft layer according to the relation between the frictional and inertia forces during shuttle deceleration. The internal frictional force of the weft yarn layer is determined by the internal pressure and the structure of the layer. As the yarn layer density and yarn tension influence the internal pressure, the frictional force increases in proportion to the yarn tension. The tendency of the yarn layer to come out of order by the acceleration is greatest at its top part. The tendency to transformation of the weft yarn layer is determined by the density of the layer, yarn tension, and the degree of transformation, and the degree of transformation is influenced by the amount of acceleration.

STUDIES ON THE PICKING MOTION ON THE HIGH SPEED POWER LOOM. PART 3. ON THE LOCUS OF THE SHUTTLE MOVEMENT (1). E. Kuze. J. Textile Machy. Soc. Japan 11, No. 2: 38-45 (1958). In Japanese (English summary). Through BCIRA 38: 1531 (1958). (2719)

The shuttle speed has decreased by 3-4% of the initial speed when it arrives at the other side of the loom. It is difficult to calculate the shuttle movement across the loom even if some assumptions are made.

STUDIES ON THE PICKING MOTION ON THE HIGH SPEED POWER LOOM. PART 4. ON THE LOCUS OF THE SHUTTLE MOVEMENT (2). E. Kuze. J. Textile Machy. Soc. Japan 11, No. 3: 39-42 (1958). In Japanese (English summary). Through BCIRA 38: 1761 (1958). (2720)

The effect of loom speed is small on ordinary looms but greater on high speed looms. If the initial shuttle speed is kept constant the variation of the locus of the shuttle movement, due to change of loom speed, becomes fairly large, even at low loom speeds. If the initial shuttle speed or the picking time is changed the locus of the shuttle movement changes to some extent.

STUDIES ON THE PICKING MOTION FOR THE HIGH SPEED POWER LOOM. PART 5. E. Kuze. J. Textile Machy. Soc. Japan 11, No. 7: 35-43 (July 1958). In Japanese (English summary). Through BCIRA 38: 3509 (1958). (2721)

The effects of shuttle movement, unwinding tension and shape of shed on the behavior of the weft yarn were studied theoretically. The shape of the yarn near the fell of the cloth is usually not straight but curved, due to yarn weight, air resistance, and inertia. The straight weft may be stopped by the warp yarns, rarely when the weft is fine but frequently when it is coarse, when the reed space is large, when the shuttle speed is small in relation to the loom speed or the timing of the shed closing, or when the picking is late.

NEW SULZER FOUR-COLOR WEAVING MACHINE. Sulzer Bros. Ltd. Swiss Tech. No. 1: 47-49 (1959). (2722)

Features of the Sulzer 4-color loom are described and illustrated. Photos, diagrs.

MAXBO LOOM MODIFICATIONS. M. Pääbo. Skinner's Silk & Rayon Record 33: 550 (June 1959). (2723)

Some remarks on modification and use of the Maxbo loom. Photos.

EXPERIMENTAL ANALYSIS OF THE PERFORMANCE OF THE LETOFF MOTION BY MEASURING WARP TENSION AND LETTING-OFF LENGTH PER PICK. K. Sakamoto and H. Kamogawa. J. Textile Machy. Soc. Japan 11, No. 9: 35-39 (1958). In Japanese (English summary). Through BCIRA 38: 4742 (1958). (2724)

Warp tension was measured by using steel rings, a strain meter and an electromagnetic oscillograph, without altering the warp path; warp feed length per pick was measured by using cameras, a pick counter, and flash bulbs. The methods were applied to positive and negative letoff devices at 5 radii of the warp beam. With the negative device, the variation of warp tension is from +9.1 to -5.4% and of the letting-off length per pick $\pm$ 1%; air conditioning is recommended. With the positive device, the corresponding figures are +1.6 to 3.7% and +0.1 to - 0.3% respectively.

LOOMFIXER AND HIS JOB. PART 7. W. Westbrook. Textile Bull. 85: 68, 70-71 (June 1959). (2725)

A planned preventive maintenance program for loom brakes is described.

Knitting C3

REMOVING BANNER CAM DISKS. E. Bridges. Textile Inds. 123: 137-138 (July 1959). (2726)

A simple, mill-made tool is described. Photos, diagr.

NEW TECHNIQUES FOR KNITTING WITH METALLIC YARNS. L. E. Seidel (Dow Chem. Co.). Am. Textile Reptr. 73: 41-42 (July 16, 1959). (2727)

New techniques for yarn package preparation, warping, and knitting technology are outlined.

A STUDY ON WARP TENSION OF A TRICOT MACHINE. PART 3. AN EXAMPLE OF THE LINEARIZATION OF THE TENSION CONTROL SYSTEM. M. Maeda and T. Yamaguchi. J. Textile Machy. Soc. Japan 11, No. 11: 21-34 (Nov. 1958). In Japanese (English summary). (2728)

Fabrics C4

PROPERTIES OF FABRICS PRODUCED FROM THREE EXTRA LONG STAPLE COTTONS. G. F. Ruppenicker, Jr. and J. J. Brown (So. Reg. Research Lab.). Textile Research J. 29: 567-573 (July 1959). (2729)

Results are reported of a comparative evaluation of the properties of fabrics produced from the American-Egyptian Pima S-1, Egyptian Karnak, and a high strength Upland cotton, Hybrid Strain 330. Relationships of some fiber and yarn properties to fabric properties are shown. The reactions of fabrics woven from these cottons to chemical finishing treatments (mercerization, scouring, bleaching, and dyeing) are also discussed. In general, it was found that the Pima S-1 cotton produced fabrics which were approximately equal in breaking and tearing strength to those made from Hybrid Strain 330 cotton and which were stronger than those made from Karnak. Gray fabrics made from Pima S-1 had higher elongation, greater resistance to flex abrasion, and better draping qualities than those made from the other two cottons. The finishing treatments had varied effects on the fabrics, but in most cases those made from Pima S-1 remained equal to or better than those made from the other cottons in the properties measured. Fiber and yarn properties were closely related to fabric properties. Graphs, tables, 13 refs.

MECHANISM OF PILLING. D. Gintis and E. J. Mead (E. I. du Pont de Nemours & Co.). Textile Research J. 29: 578-585 (July 1959). (2730)

Studies of the mechanism of pilling have demonstrated that pilling propensity is determined by the rates of fuzz formation, entanglement, and pill wearoff. Motion pictures of fabrics subjected to an abrading action showed that the abradant acted on exposed fiber sections to pull loops which then opened to form fuzz. A pill formed quickly when the fuzz density reached a critical level. The fibers were then twisted and entangled, gradually involving nearby fibers. As the abrading action continued, pills wore away. Techniques were developed which permitted independent quantitative study of each of these three phenomena. The general applicability of this mechanism has been demonstrated with modified polyester fibers. Diagrs, graphs, tables, 6 refs.

SYNTHETIC YARN KNOTLESS FISH NETS. Skinner's Silk & Rayon Record 33: 562-563 (June 1959). (2731)

One of the principal methods of preparing knotless nets is described, and their advantages are cited. Photos.

HIGH-PILE SLIVER KNITTING MACHINE. Tompkins Bros. Am. Textile Reptr. 73: 31 (July 16, 1959). (2732)

The Tompkins S-1-junior circular spring needle knitting machine is a 4-feed unit equipped with 4 carding mechanisms for feeding staple to the knitting needles from a tow or sliver supply. Its operation is described. Photo.

EFFECT OF DRY AND WET CLOTHING ON BODY COOLING AT LOW AIR TEMPERATURES. J. F. Hall, Jr., A. P. Kearny, J. W. Polte, and S. Quillette (Aero Medical Lab.). Wright Air Development Center, Wright-Patterson Air Force Base, Ohio. May 1958. 26 p. WADC tech. report 57-769. PB 151 206. Available from Office of Technical Services, Washington 25, D. C. $1.00. (2733)

Skin, rectal, and extremity temperatures of clothed subjects, immersed in cold water (0° C) for brief periods and then exposed, while occupying a life raft, to ambient air temperatures ranging from +4.4° to -28.9° C, were measured. Amount and partitioning of the water absorbed by the clothing and effects of water immersion upon metabolic level were determined. For comparative purposes, cooling rates of these subjects wearing dry clothing at the various air temperatures were also determined. On the basis of total body-heat-storage loss, a series of predictive curves for human tolerance for subjects clothed in wet and dry garments while exposed to various low air temperatures in a life raft is presented. Tables, graphs, photos, 7 refs.

TWO-COLOR MECHANISM FOR HI-PILE KNITTING MACHINES. Wildman Jacquard Co. Am. Textile Reptr. 73: 25, 27, 110 (July 16, 1959). (2734)

An automatic 2-color mechanism enables the knitter to produce any number of horizontal stripes of different colors in any desired width of stripe. "Trick" wheels may be used to produce various vertical patterns at the same time or separately as required. A control chain with high and low links may be set up to change colors as desired. Photos.

FIBER TRANSLATION IN BLENDS. M. J. Coplan (Fabric Research Labs.). Modern Textiles Mag. 40: 39-42 (July 1959). (2735)

Examination of basic factors which may prevent a blend from behaving in accordance with predetermined calculation based on measurements of the properties of the respective fibers in the blend. Graphs, tables.

FUNDAMENTALS OF WOVEN STRUCTURES. E. L. Golec. 1959. 165 p. Available from Lowell Technological Inst. Book Store, Lowell, Mass. $4.50. (2736)

A student manual presenting the study of elementary textile design as an approach to and as a basis for engineering design of woven textile structures. Diagrs, fabric swatches.

DEVELOPMENT AND EVALUATION OF WATERPROOF TWO-WAY STRETCH LAMINATED FABRICS. R. Briganti and P. Sylvia, Jr. U. S. Navy Clothing & Textile Office, Brooklyn 32, N. Y. Apr. 1958. 21 p. Research and development report no. 21. PB 151 034. Available from Office of Technical Services, Washington 25, D. C. 75¢. (2737)

The development and evaluation of laminated, waterproof, two-way stretch swim suit fabrics are discussed. These fabrics are evaluated against currently available waterproof materials having stretch properties in only one direction. This report covers a detailed analysis of laboratory tests of the component fabrics, with a short summary of service evaluations of finished garments. Tables, 8 refs.

CONSUMER SATISFACTION WITH WOMEN'S BLOUSES. PART 2. LABORATORY-WEAR STUDIES. M. C. Whitlock. Univ. of Rhode Island, Agri. Experiment Station, Kingston, R.I. June 1958. 62 p. Bull. 342. (2738)

Five northeastern states cooperated in a field study and laboratory-wear studies to determine relationships between the degree of satisfaction received from garments and (1) practices in purchase, use, and care and (2) physical characteristics of the new and worn garments as determined by physical and chemical tests. The long range objective was to develop ways to predict consumer satisfaction with garments. This report is concerned with the laboratory-wear studies. Photos, tables, 6 refs.

A CONSUMER APPRAISAL OF IMPORTED WOOL FABRIC IN CLOTHING. H. R. Linstrom and D. B. Levine. U.S. Agri. Mktg. Serv., Washington 25, D. C. Feb. 1959. 14 p. AMS 300. Free. (2739)

Results are reported of a small-scale exploratory study to determine consumers' evaluations of specific features of both imported and domestic wool fabrics in women's clothing. The data are derived from personal interviews with a sample of approximately 600 homemakers in York, Pa., during January and February 1957.

FAILURE MECHANISMS IN GLASS FIBER REINFORCED PLASTICS. M. B. Desai and F. J. McGarry. ASTM Bull. No. 239: 76-79 (July 1959). (2740)

In glass fiber reinforced plastic laminates, internal cracking under tensile stressing takes place because of yarn crimp resulting from fabric weave and because of resin tensile and shear brittleness. This effect is recognized and measured by water absorption determinations carried out subsequent to tensile loading cycles. It does not occur under compressive loading. The cracking can be prevented by the use of no-crimp fabrics, if loaded in a principal direction, or by the use of more ductile resins. The technique of observation provides a valuable tool to study the 3-dimensional and interlaminar characteristics of such composite structures. Graphs, table.

DECORATIVE FABRICS FROM FIBROUS GLASS. F. J. Lachut (Owens-Corning Fiberglas Corp.). Am. Dyestuff Reptr. 48: 43-44, 50 (June 15, 1959). (2741)

The Coronizing operation is described in detail, and the development of Aerocor and Coro-Dyed yarns is noted. Photo, diagrs.

BASIC FACTS ABOUT THE CARPET AND RUG INDUSTRY. 1959 Edition. American Carpet Institute, Inc., Empire State Bldg., New York 1, N. Y. 1959. 28 p. Free. (2742)

THE MANUFACTURE AND PERFORMANCE CHARACTERISTICS OF ACRILAN CARPET. Chemstrand Corp., Decatur, Ala. July 1959. 33 p. Bull. AC-1. (2743)

HISTORY OF NONWOVEN DEVELOPMENT AT 3M. B. E. Frank (Minn. Mining & Mfg. Co.). Am. Dyestuff Reptr. 48: 51-52 (July 13, 1959). (2744)

The development of Sasheen ribbon, with emphasis on the continuous dyeing method used, is described.

SYMPOSIUM ON NONWOVEN FABRICS. Division of Industrial and Engineering Chemistry, 135th Meeting, American Chemical Society, Boston, Mass., April 1959. Ind. Eng. Chem. 51: 901-912 (Aug. 1959). (2745)

The nonwoven fabrics industry, by L. L. Shailer, Jr. (B. F. Goodrich Chem. Co.), p. 901; Mechanics of nonwoven fabrics, by D. R. Petterson (Chicopee Mfg. Co.), p. 902-903; Natural and synthetic fiber felts, by T. J. Gillick, Jr. (Am. Felt Co.), p. 904-907; Binders for nonwoven fabrics, by N. H. Sherwood (B. F. Goodrich Chem. Co.), p. 907-910; Nonwoven fabrics: their growing importance to the textile industry, by D. C. Nicely (Chemstrand Corp.), p. 910-911; Nonwoven fabrics: their growing importance to the paper industry, by W. E. Carlson and K. A. Arnold (St. Regis Paper Co.), p. 911-912. Photos, diagrs, graphs, tables, refs.

WEAVING WITH A SEWING MACHINE. P. Abbenheim. Textile Inds. 123: 101-102, 121 (July 1959). (2746)

On the Malimo 500 machine a sheet of warp is fed into the machine from a creel, another adjoining creel supplying a similar number of ends of sewing thread. The filling is provided from a creel at the side of the unit. Between each end of warp there is a chain stitch sewing unit, so that alternately there is an end of warp and a row of chain stitching. Features of the machine are described. Photos, diagrs.

WHAT TO LOOK FOR IN LATEX. R. H. Boggs. Textile World 109: 93, 95 (July 1959). (2747)

The properties of various types of latex and the qualities necessary for specific applications are described.

FEDERAL TRADE COMMISSION RULES FOR FIBER IDENTIFICATION. Textile World 109: 43-44, 154-156 (July 1959). (2748)

Summary of rules and regulations under the Textile Fiber Products Identification Act. The rules and regulations in final form are printed with the text of the Act in a 32-page booklet identified as "Rules and Regulations Under the Textile Fiber Products Identification Act" available from the Federal Trade Commission, Washington, D. C.

FINISHING AND CHEMICAL PROCESSING D

BLENDS OF POLYFIBERS WITH COTTON: ADVANTAGES--DYEING AND FINISHING TECHNIQUES. M. Santymire (E. I. du Pont de Nemours & Co.). Am. Dyestuff Reptr. 48: 45-50 (June 15, 1959). (2749)

The advantages of Dacron/cotton, Orlon/cotton, and nylon/cotton blends and dyeing and finishing techniques for these blends are summarized. Diagr, graphs, table.

Chemical processes D1

EFFECT OF WOOL POROSITY ON SCOURING AND DRYING PROCESS. PART 8. SUPPLEMENTARY NOTES ON SOLVENT SCOURING PROCESS. H. Sanuki. J. Textile Machy. Soc. Japan 11, No. 10: 27-32 (Oct. 1958). In Japanese (English summary). (2750)

HEAT TREATMENTS: A SIGNIFICANT FEATURE OF MODERN TEXTILE FINISHING. B. C. M. Dorset. Textile Mfr. 85: 289-293 (June 1959). (2751)

This review of developments in high temperature treatment of fabrics to enhance their properties includes: treatment of triacetate fabrics to raise their ironing temperature; presetting of nylon hosiery for increased elasticity and stretch; use of molten metal for dimensional stabilization of nylon thread and tire cords; and fluid bed treatment of Terylene fabrics for increased dimensional stability.

PHENOLIC-FORMALDEHYDE RESINS AS FINISHING AGENTS FOR COTTON FABRICS. L. H. Chance, F. S. Perkerson, and O. J. McMillan, Jr. (So. Reg. Research Lab.). Textile Research J. 29: 558-564 (July 1959). (2752)

Cotton fabric was treated with phenolic-formaldehyde resins and seven halogenated phenolic-formaldehyde resins and the properties of the fabric evaluated. The fabric was treated by padding it through a solution of phenol in alkaline aqueous formaldehyde, drying, and curing in an oven. All the fabrics had improved rot resistance and crease recovery. The halogenated phenols did not seem to have any advantage over plain phenol in imparting rot resistance to cotton fabric. Fabrics treated with m-chlorophenol and m-bromophenol had the highest crease recovery. Tables, 11 refs.

PREPARATION AND BLEACHING. PART 4. THE ACTION OF ENZYMES ON SIZING MATERIALS. K. S. Campbell (N. C. State Coll. School of Textiles). Textile World 109: 73, 77 (July 1959). (2753)

The principal desizing methods based on enzymatic action are outlined.

FLUOROCHEMICALS: THE NEW IDEA IN TEXTILES. E. J. Grajeck and W. H. Petersen (Minnesota Mining & Mfg. Co.). Am. Dyestuff Reptr. 48: 37-39 (June 29, 1959). (2754)

Textile applications of fluorochemicals to give fabrics water-repellency and oil-repellency, as well as durability to commercial drycleaning.

TETRAHYDROPYRIMIDINONE DERIVATIVES FOR NON-CHLORINE RETENTIVE, WRINKLE RESISTANT COTTON FABRICS. J. G. Frick, Jr., B. A. Kottes, and J. D. Reid (So. Reg. Research Lab.). Am. Dyestuff Reptr. 48: 23-25 (June 29, 1959). (2755)

A new wrinkle resistant and wash-and-wear finish for cotton fabrics has been developed using the dimethylol derivative of tetrahydro-5-hydroxy-2(1H)-pyrimidinone as the finishing agent. The finish is comparable to other wrinkle resistant finishes in current use but causes no chlorine damage even after repeated hot launderings. Tables, 9 refs.

IMPORTANT FACTORS TO CONSIDER WHEN SELECTING WATER-SOLUBLE GUMS. C. M. Ferri (Morningstar-Paisley, Inc.). Am. Dyestuff Reptr. 48: 32-34 (July 13, 1959). (2756)

Factors such as color, mesh size, viscosity, dusting, and purity, which influence the application of water-soluble gums, are examined. Photos, graph, table.

MECHANISMS INFLUENCING THE WASH AND WEAR CHARACTERISTICS OF CELLULOSIC FABRICS. C. R. Williams (Monsanto Chem. Co.). Am. Dyestuff Reptr. 48: 27-30, 39 (June 29, 1959). (2757)

A study of both cotton and rayon fabrics treated to provide a wide range of properties is presented, with the object of delineating mechanisms and physical properties influencing the wash and wear characteristic of fabric. Two distinctly different mechanisms of fabric distortion are observed, and attributed to distortional forces: (1) internal to the fabric, and (2) external to the fabric. Achievement of dimensional stability prevents the development of internal forces, and high wrinkle recovery minimizes external distortions. Good wash and wear appearance after laundering requires both dimensional stability and high wet wrinkle recovery, but is probably not dependent on high dry wrinkle recovery. All three physical properties are required for good wash and wear performance. Photos, graphs, table, 7 refs.

USE OF TRICHLOROETHYLENE IN CONTINUOUS SCOURING AND BLEACHING OF TEXTILES. W. A. S. White, H. J. Ross, and N. F. Crowder (Imp. Chem. Inds. Ltd). J. Textile Inst. 50: P274-P293 (June 1959). (2758)

Previous work on solvent-extraction systems for scouring textiles is briefly reviewed. Details of an improved continuous system, based on trichloroethylene, are given including a description of the pilot plant employed in the investigation. A commercial plant now in operation is also described. The trichloroethylene treatment, followed by continuous desizing with sodium peroxide, has been applied to a variety of cotton piece goods as a preparation for dyeing. Various modifications to obtain a full bleach on cotton have been investigated and the advantages of solvent dewaxing of cotton before conventional bleaching have been assessed. It is shown that the new continuous solvent-extraction technique can be applied with advantage for scouring other fibers such as rayon, linen, wool, jute, and glass and that, in general, such processes can be carried out continuously in a convenient, safe, and economic manner. In addition to cotton, the solvent-extraction method appears of particular promise for scouring wool piece goods and glass fiber fabrics. Photos, diagrs, tables, 14 refs.

COST OF THPC FLAMEPROOFING. O. J. McMillan, Jr. (So. Reg. Research Lab.). Textile Inds. 123: 94-96 (July 1959). (2759)

Preliminary cost studies for the THPC-methylolmelamine treatment of cotton show that protection from flammability can be inexpensive. The resin treatment needed to impart the required degree of flame resistance has been estimated to cost as little as 15¢ per lb of product, based on a reasonable projected price of 70¢ per lb of THPC. Diagr, graphs, tables, 10 refs.

POTENTIAL MARKETS FOR PARTIALLY ACETYLATED COTTON. F. D. Barlow, A. S. Cooper, Jr., and H. L. E. Vix. U. S. Agri. Mktg. Serv., Washington 25, D. C. July 1959. 22 p. AMS-324. (2760)

The opportunity for commercializing PA cotton is confined primarily to utilizing the improved properties of heat and scorch resistance. These characteristics are of greatest importance in commercial laundry industry uses and for home ironing-board covers. Tables, graphs, 11 refs.

CONTINUOUS CARBAMOYLETHYLATION OF COTTON FABRIC: PRELIMINARY COST STUDY. K. M. Decossas, O. J. McMillan, Jr., W. A. Reeves, J. D. Guthrie, and E. F. Pollard (So. Reg. Research Lab.). Am. Dyestuff Reptr. 48: 30-31 (July 13, 1959). (2761)

This cost study is based on continuous operations in a new hypothetical plant, at a fabric processing rate of 120 yd/min. Annual productions were varied by operating the hypothetical plant for one, two, and three shifts for 250 days/yr, and for three shifts for 350 days/yr. The study shows that, at an annual production of 60,480,000 yd, cotton can be carbamoylethylated by a continuous method at a cost of 9.1¢/yd or 16.4¢/lb of product. Diagr, graph, tables, 5 refs.

DEVELOPMENT OF DURABLE FLAME-RETARDANT FINISHES FOR COTTON. J. G. Frick, Jr., R. L. Arceneaux, E. K. Leonard, and J. D. Reid (So. Utilization Research & Develop. Div.). Wright Air Development Center, Wright-Patterson Air Force Base, Ohio. Nov. 1958. 60 p. WADC tech. report 58-130. (2762)

New methods for imparting a durable, flame-retardant finish to cotton fabrics were investigated. Primarily, methods were sought for the chemical attachment of phosphorus-containing groups to cellulose. Classes of compounds investigated include: amides of phosphorus (V) acids; imides of phosphorus (V) acids; tetramethylphosphorodiamidic acid derivatives; phosphorus compounds containing epoxy groups; triazinylphosphonates; and phosphoroisothiocyanatidate derivatives. Also investigated were modifications of the phosphoric acid-urea process for the phosphorylation of cotton. The best finish developed was inferior in some respects to existing finishes. Some suggestions for future work are included. 25 refs.

WHY DOES THE FLUORESCENCE OF OPTICAL BLEACHES REACH A LIMIT? E. Allen (Am. Cyanamid Co.). Am. Dyestuff Reptr. 48: 27-29 (July 13, 1959). Soap Chem. Specialties 35: 51-53 (July 1959). (2763)

The fluorescence of optical bleaches on cloth reaches a limit at high concentrations of optical bleach. The reason is that almost all the available ultraviolet energy used for exciting the fluorescence is absorbed at high concentrations, and additional optical bleach cannot absorb any more. The shape of the fluorescence vs concentration curve on cotton cloth can be fairly well predicted on the basis of the Kulbelka-Munk reflectance law. Graphs, 3 refs.

MILD-CURE CATALYST. J. B. Irvine, J. K. Simons, and J. H. Davids (Quaker Chem. Prods. Corp.). Am. Dyestuff Reptr. 48: 37-42, 50 (June 15, 1959). (2764)

A mild-cure catalyst is described which is effective and practical for curing crease resistant finishes on woven goods and dimensional control finishes on knitted fabric. The catalyst consists of a mixture of two inexpensive metal salts, aluminum chloride hexahydrate and magnesium chloride hexahydrate. The limitations of cure time, cure temperature, ratio of salts, and concentration in pad mix are discussed. Laboratory evaluation of the action of the mild cure catalyst with five types of wash-wear finishing agents is described. Four mill applications and resultant fabric evaluation are presented. These include woven goods and knitted fabrics. Graphs, tables, 7 refs.

PRODUCING NAPPED AND SHEARED INTERLOCK KNIT FABRIC OF ORLON. E. I. du Pont de Nemours & Co., Textile Fibers Dept., Wilmington, Del. June 1959. 4 p. Bull. OR-99. Free. (2765)

CREASE RECOVERY, WATER IMBIBITION, AND COVALENT CROSS LINKAGES. J. T. Marsh. Textile Mfr. 85: 294-295 (June 1959). (2766)

The relationship of swelling to covalent cross-linking as it pertains to creaseproofing treatments is examined. Diagrs, 18 refs.

Dyeing and printing D2

INDIGO DYEING IN CHINA. G. O. Richardson (Nat. Aniline Div., Allied Chem. Corp.). Dyestuffs 43: 41-44 (June 1959). (2767)

RELATION OF DYE STRUCTURE TO PROPERTIES OF DISPERSE DYES. PART 1. ANTHRAQUINONE BLUES. V. S. Salvin and R. A. Walker (Celanese Corp.). Am. Dyestuff Reptr. 48: 35-43 (July 13, 1959). (2768)

A series of blue anthraquinone dyes synthesized by condensation of aromatic amines with dinitro anthrarufin, dinitro chrysazin, or their mixtures was evaluated as to colorfastness and dyeing properties. Variations in structure were related to these properties. Tables, 15 refs.

RELATION OF DYE STRUCTURE TO PROPERTIES OF DISPERSE DYES. PART 2. DIPHENYLAMINE YELLOWS. V. S. Salvin and J. R. Adams (Celanese Corp.). Am. Dyestuff Reptr. 48: 43-47 (July 13, 1959). (2769)

The relation of structure to dyeing properties was studied in a wide range of lightfast diphenylamine yellow dyes synthesized for the purpose. These materials were made by variation of the substituents placed on a p-sulfonamide grouping of 2-nitrodiphenylamine-4-sulfonamide. Tables, 8 refs.

DU PONT DYES FOR DYNEL. E. I. du Pont de Nemours & Co. Dyes & Chem. Tech. Bull. 15: 79-87 (June 1959). (2770)

Recommendations for the dyeing of Dynel are presented.

DYEING, PRINTING, AND FINISHING OF ZEFRAN ACRYLIC ALLOY FIBER. E. I. du Pont de Nemours & Co. Dyes & Chem. Tech. Bull. 15: 88-109 (June 1959). (2771)

Scouring, desizing, bleaching, dyeing, printing, and finishing recommendations for Zefran and Zefran blends.

STAINING OF NYLON BY DIRECT DYES. E. I. du Pont de Nemours & Co. Dyes & Chem. Tech. Bull. 15: 70-72 (June 1959). (2772)

Direct dyes are frequently used for dyeing cotton and rayon fabrics containing filament or spun nylon effects that must be left white. Data on nylon staining with du Pont direct dyes are given.

DYEING DACRON POLYESTER FIBER TOW BY THE PAD-FIX METHOD WITH DISPERSE AND DISPERSE-DEVELOPED DYES. E. I. du Pont de Nemours & Co. Dyes & Chem. Tech. Bull. 15: 67-69 (June 1959). (2773)

The pad-fix method consists of padding the tow with a dye dispersion, placing the tow in a dyeing machine, adding water, heating to dyeing temperature, and continuing the dyeing in the usual manner. In addition to improved levelness, a reduction in dyeing time results, as well as improved quality and better uniformity from lot to lot.

EFFECT OF METALS ON CATIONIC DYES. E. I. du Pont de Nemours & Co. Dyes & Chem. Tech. Bull. 15: 75-76 (June 1959). (2774)

The effect of iron and copper on cationic dyes applied to Orlon are noted.

SYMPOSIUM ON THE DIAZO REACTION TODAY. J. Soc. Dyers Colourists 75: 277-308 (June 1959). (2775)

Peter Griess, by J. Boulton, p. 277-278; Life and times of Peter Griess, by W. H. Cliffe, p. 278-285; Recent work on the mechanism of diazotization, by J. H. Ridd, p. 285-289; Mechanism of the coupling process, by W. Bradley, p. 289-291; Relative rates of reduction of a series of azo compounds, by G. P. Warwick, p. 291-299; Diazo reaction in the coloration of hydrophobic manmade fibers, by H. R. Hadfield and W. F. Liquorice, p. 299-307; Concluding remarks, by C. Paine, p. 307-308.

ZEFRAN YARN DYEING AND KNITWEAR APPLICATIONS. J. W. Burnette (Dow Chem. Co.). Am. Textile Reptr. 73: 53-54 (July 16, 1959). (2776)

The advantages of package dyeing for Zefran and its uses in knitwear are briefly discussed.

EFFECT OF THICKENING AGENTS IN PADDING WITH ULTRASPERSE VAT DYESTUFFS. R. Kern (Sandoz Ltd). Am. Dyestuff Reptr. 48: 57-61 (June 15, 1959). (2777)

In the continuous dyeing of cotton piece goods, intermediate drying after pigmentation is often accompanied by migration. The use of thickening agents in the padding liquor was studied as a means of checking migration. The suitability of some representative thickenings and their effect on the pigment dispersion and the drying process were examined, using ultrasperse vat dyes. The possible scope of thickening agents is outlined in pad processes with direct and disperse dyes. Photos, photomicrographs, diagrs, tables.

HYDROXYLAMINE IN THE HIGH-TEMPERATURE DYEING OF ACRYLIC FIBERS. F. Schouteden (Gevaert Photo-Producten NV). (Letter to the editor). J. Soc. Dyers Colourists 75: 309-310 (June 1959). (2778)

BASIC CHEMISTRY OF DYES AND DYEING. PART 5. W. Postman (Ga. Inst. of Technol.). Textile World 109: 85, 88-89 (July 1959). (2779)

The 6 basic types of direct dyes, the aftertreatments affecting their fastness properties, and the structure of sulfur dyes are discussed.

HOW TO DYE ZEFRAN/WOOL BLENDS. Modern Textiles Mag. 40: 28-29 (July 1959). (2780)

Procedures for piece dyeing with neutral premetalized and acid milling, chrome, or acid metalized dyes, piece dyeing with aftertreated direct and acid milling or chrome dyes, and piece dyeing for Zefran reserved and wool dyed or Zefran dyed and wool reserved are outlined.

X-RAY STUDY OF THE EFFECT OF SOAPING ON CELLULOSE DYED WITH SOME ANTHRAQUINONE VAT DYES. J. O. Warwicker (Shirley Inst.). J. Textile Inst. 50: T404-T417 (June 1959). (2781)

X-ray photographs of cellulose substrates heavily dyed with 11 anthraquinone vat dyes show extra patterns due to the dyes. These extra patterns can be seen on x-ray photographs of unsoaped dyeings but are, in general, more intense, sharper, and better oriented on those of soaped dyeings. Examination of these extra patterns shows that they are caused by crystals of dye held in the fiber, and the evidence deduced from them supports the view that soaping promotes crystallization of the dyes within the fiber. Confirmation that these extra patterns are from crystals of dye held in the fiber is given by a comparison of the x-ray photographs of dope-dyed and normally dyed filaments. Photomicrographs, tables, 25 refs.

DYEING OF WOOL/SYNTHETIC FIBER UNIONS. E. Bellhouse. Cobbler 11: 30-35 (1959). (2782)

Current methods of dyeing blends of wool with polyamide, acrylic, and polyester fibers are reviewed.

CIS-TRANS ISOMERISM OF THIOINDIGO DYES IN THE SOLID STATE. G. S. Egerton (Univ. of Manchester). (Letter to the editor). Nature 183: 389-390 (Feb. 7, 1959). (2783)

ISOEQUILIBRIUM TEMPERATURE IN DYEING. K. Odajima (Toho Rayon Co. Ltd). (Letter to the editor). J. Soc. Dyers Colourists 75: 308 (June 1959). (2784)

TWIST-SETTING OF CARPET YARNS OF ACRILAN ACRYLIC FIBER. E. I. du Pont de Nemours & Co. Dyes & Chem. Tech. Bull. 15: 77-78 (June 1959). (2785)

The effect of twist-setting on the lightfastness of Sevron cationic dyes on Acrilan carpet yarns is noted.

KNIT GOODS OF ORLON ACRYLIC FIBER: PROCESSING AND DYEING. G. R. Turner (E. I. du Pont de Nemours & Co.). Am. Dyestuff Reptr. 48: 48-50, 52 (July 13, 1959). (2786)

A general discussion of the physical handling of knit goods made of Orlon acrylic fiber and Orlon blends is given, with particular emphasis on the prevention of wrinkle marks. Dye selection is considered, with cationic dyes grouped into slow, medium-, and fast-dyeing categories. Variables encountered in setting up a dyeing procedure and selecting dyes to produce various shades are discussed. Particular emphasis is placed on following a specific procedure with special consideration of proper dye selection for any given shade. Table.

CARBONIZING FASTNESS OF CATIONIC DYES. E. I. du Pont de Nemours & Co. Dyes & Chem. Tech. Bull. 15: 73-74 (June 1959). (2787)

Fastness data on cationic dyes on Orlon/wool fabrics are given.

HOW TO GET BEST RESULTS FROM VIGOUREUX PRINTING. Textile World 109: 76-77 (July 1959). (2788)

Recent improvements in Vigoureux printing, including the use of a two-roll machine and solvent dye fixation, are outlined. Photo, diagr.

THE PRINTING OF ACRILAN AND ITS BLENDS. Chemstrand Corp., Decatur, Ala. July 1959. 7 p. Bull. DF 13. (2789)

SILK SCREEN TECHNIQUES. J. I. Biegeleisen and M. A. Cohn. Dover Pubns, New York, N. Y. 1958. 187 p. Dover books on art. $1.45. (2790)

Contents: origin and development, basic principles, basic equipment, the paper stencil method, the block-out stencil method, the tusche stencil method, the film stencil method, the photographic stencil method, multi-color printing, color, and printing.

Mechanical processes D3

SHRINKAGE IN STEAM OF NYLON 6.6 YARNS. D. L. Munden and D. Slater (Hosiery & Allied Trades Research Assoc.). J. Textile Inst. 50: T393-T403 (June 1959). (2791)

This report describes the results of investigations into the effect of saturated steam on some properties of nylon 6.6 yarns. In particular, the effect of the temperature and strain on the yarn during previous thermal treatments on the irreversible free shrinkage in saturated steam is discussed in detail. Photos, graphs, tables, 2 refs.

"ELECTRIFYING" FINISHING PROCESS FOR PILE FABRICS. Am. Textile Reptr. 73: 33, 108-109 (July 16, 1959). (2792)

The operation of the Turbo electro-finisher for the lifting and polishing of pile fabrics is described. A typical set-up is illustrated, and its mill applications are noted. Photos, diagrs.

TESTING AND MEASUREMENT E

INTERLABORATORY EVALUATION OF TESTING METHODS. J. Mandel and T. W. Lashof. ASTM Bull. No. 239: 53-61 (July 1959). (2793)

In this paper a new approach is presented for the analysis of interlaboratory studies of test methods. The various sources of variability in test methods are first reexamined and a new general scheme to account for them is proposed. This scheme leads to a simple design for round-robin tests but requires a new method of statistical analysis, geared to the practical objectives of a round robin. The procedure is illustrated in terms of the data obtained in an interlaboratory study of the Bekk smoothness tester for paper. Graphs, tables, 7 refs.

Fibers E1

TABLES OF COTTON-FIBER STRENGTH FOR FLAT BUNDLE STRENGTH TESTS AT 1/8-INCH GAGE. U. S. Agri. Mktg. Serv. Cotton Div., Washington 25, D. C. July 1959. 24 p. AMS-323. (2794)

Yarns E2

PHOTOELECTRIC TWIST IRREGULARITY TESTER. M. Uno, H. Saito, A. Shiomi, and T. Hiramatu (Kyoto Tech. Univ., Japan). Textile Research J. 29: 550-557 (July 1959). (2795)

The reflected light from a yarn squeezed flat shows its peak value when measured in a plane vertical to the twisted fibers. A twist irregularity tester based on this principle, which operates automatically and records the change of twist angle, was constructed. Several twist irregularity curves were obtained with both staple yarns and continuous filament yarns. Some factors affecting the accuracy of the test results were discussed, and the curve was compared with the twist angle measured by visual observation. Photos, graphs, 11 refs.

Fabrics E3

RELATIONSHIP BETWEEN BREAKING TIME AND BREAKING LOAD FOR A WORSTED FABRIC TESTED ON CRE AND CRT MACHINES. A. S. Tweedie and M. T. Mitton (Nat. Research Coun., Canada). (Letter to the editor). Textile Research J. 29: 589-591 (July 1959). (2796)

Other E4

APPARATUS FOR THE DETERMINATION OF DYE SOLUBILITY. F. Mindermann and A. Franz (J. R. Geigy AG). Melliand Textilber. (English ed.) 40, No. 2: 128,130 (1959). (2797)

The design, advantages, and use of the Geigy solubility test apparatus are described. Photo, diagr.

MILL MANAGEMENT F

Industrial engineering F1

TIPS ON CHOOSING, USING, AND MAINTAINING TEXTILE ROLLS. J. T. Gordon (Stowe-Woodward, Inc.). Textile Inds. 123: 87-89 (July 1959). (2798)

Pointers on dye pad, slasher, and fulling mill rolls. Photos.

HOW GOOD ARE YOUR DECISIONS?--SIMPLE ARITHMETICAL CHECKS. W. E. Duckworth. Engineering 187: 459-460 (Apr. 10, 1959). (2799)

Statistical test for evaluating significance of difference in comparing a long-term average against several short-term averages. 8 refs.

ANALYSES OF INDUSTRIAL OPERATIONS. E. H. Bowman and R. B. Fetter. Richard D. Irwin, Inc., Homewood, Ill. 1959. 485 p. $7.95. (2800)

Case histories of linear programming, queuing theory, marginal analysis, and economic analysis.

SOUTHERN TEXTILE METHODS AND STANDARDS ASSOCIATION. PROCEEDINGS, SPRING MEETING, 1959. Papers and discussions of the Spring Meeting held at the Clemson House, Clemson, S. C., Mar. 19 and 20, 1959. 41 p. Available from Executive Secretary, P. O. Box 1387, Knoxville 1, Tenn. (2801)

Contents: M. T. M.--use and application, by W. R. Coleman, p. 1-6; Problems of installing standards, new methods, and wage incentives, by W. A. Funderburk, p. 7-10; Installing standards, new methods, and wage payments, by C. M. Joregson, p. 11-13; Performance rating, by R. A. Collinge, p. 14-16; Time study--allowances, by G. W. Funderburk, Jr., p. 17-24; Automation in the textile industry, by R. E. Machan, p. 25-39; Comments regarding the pilot spinning plant, by H. Shanklin, p. 40-41.

PLANNING FUTURE PRODUCTION. E. B. Evans. Textile Weekly 59(1): 1565-1566, 1569 (June 19, 1959). (2802)

Forecasts, based on analysis of population pyramids, consumption trends, and income elasticity.

REVIEW OF THE LITERATURE OF 1958 ON SEWAGE, WASTE TREATMENT, AND WATER POLLUTION. H. Heukelekian and others. Sewage and Ind. Wastes 31: 501-541 (May 1959); 615-661 (June 1959); 763-803 (July 1959). (2803)

Part 1. Analytical methods (41 refs) and sewage (149 refs). Part 2. Industrial wastes, including radioactive wastes. 309 refs. Textile and wool scouring wastes, p. 633-635. Part 3. Water pollution. 235 refs.

Plant and equipment F2

ACQUIRING MODERN FACILITIES. PART 2. HOW A NEW MILL WAS DESIGNED. H. M. Rogers. Textile Bull. 85: 73-74, 76, 80-81 (June 1959). (2804)

The planning and construction of the Kendall Mills bleaching, dyeing, and finishing plant at Bethune, S. C., are described.

SEALED BALL BEARINGS FOR TEXTILE MACHINERY. Textile Inds. 123: 99-100 (July 1959). (2805)

The development, construction, and typical applications of labyrinth (frictionless) and contact sealed bearings are described. Photos, diagrs.

THREEPHASE A. C. SHUNT COMMUTATOR MOTOR AND ITS APPLICATION IN THE TEXTILE INDUSTRY. Brown Boveri & Co. Ltd. Swiss Tech. No. 1: 52-55 (1959). (2806)

Photos, diagr.

CAUSTIC RECOVERY SYSTEM. Textile Inds. 123: 71-73 (July 1959). (2807)

The caustic recovery system of the Pontiac Division of Fruit of the Loom, Inc. is described. Photos, diagr.

STEAM, POWER, AND VENTILATION IN TEXTILE MILLS. Can. Textile J. 76: 59-75 (June 26, 1959). (2808)

Important roles of electricity, water, steam, air in production of Terylene, by W. B. Fraser, p. 59-62; Producing economical steam with Babcock boilers, by V. A. Johnson and C. C. Robinson, p. 63-64; Trends in finishing plant ventilation, by H. W. Frederick, p. 65-68; Lubricated plug valves ease production problems in textile mills, by P. A. Manor, p. 69-71; Factors in selection and coordination of steam equipment, by E. Fair, p. 72-73; Advances in the design and application of steam traps: many important uses, by L. S. Metcalfe, p. 74-75.

SCIENCES G

Chemistry G1

THERMALLY STABLE HIGH MOLECULAR WEIGHT POLYOXYMETHYLENES. C. E. Schweitzer, R. N. MacDonald, and J. O. Punderson (E. I. du Pont de Nemours & Co.). J. Appl. Polymer Sci. 1: 158-163 (Mar./Apr. 1959). (2809)

In this, the first of a series of 5 papers, the historical development of formaldehyde polymers, beginning with the work of Butlerov and continuing through the investigations of Staudinger and his collaborators, is reviewed. Recent studies have led to thermally stable high polymers of formaldehyde. Initiators and the role of impurities in the polymerization are described. An explanation is offered to account for differences in thermal stabilities between old and new polymers. Esterification, by which further increases in thermal stability are achieved, is described. It is proposed that the generic term "acetal resin" be used to describe high polymers that are composed of repeating oxymethylene units. Graphs, tables, 16 refs.

MOLECULAR STRUCTURE OF HIGH MOLECULAR WEIGHT ACETAL RESINS. T. A. Koch and P. E. Lindvig (E. I. du Pont de Nemours & Co.). J. Appl. Polymer Sci. 1: 164-168 (Mar./Apr. 1959). (2810)

FINE STRUCTURE OF ACETAL RESINS AND ITS EFFECT ON MECHANICAL PROPERTIES. C. F. Hammer, T. A. Koch, and J. F. Whitney (E. I. du Pont de Nemours & Co.). J. Appl. Polymer Sci. 1: 169-178 (Mar./Apr. 1959). (2811)

PHYSICAL PROPERTIES OF HIGH MOLECULAR WEIGHT ACETAL RESINS. W. H. Linton and H. H. Goodman (E. I. du Pont de Nemours & Co.). J. Appl. Polymer Sci. 1: 179-184 (Mar./Apr. 1959). (2812)

EFFECT OF SOLVENTS ON HIGH MOLECULAR WEIGHT, STABLE ACETAL RESINS. R. G. Alsup, J. O. Punderson, and G. F. Leverett (E. I. du Pont de Nemours & Co.). J. Appl. Polymer Sci. 1: 185-191 (Mar./Apr. 1959). (2813)

TEMPLATE TECHNIQUE FOR ISOTACTIC POLYMERS. Gen. Elec. Research Labs. Skinner's Silk & Rayon Record 33: 558, 560 (June 1959). (2814)

In the new process, canal complexes are used as a template to hold the reacting molecules in particular positions while they join together. Polymerization is initiated by irradiating the material with high energy electrons. Diagrs, 3 refs.

HOT ORGANIC COATINGS. R. B. Seymour (Alcylite Plastics & Chem. Corp.). Reinhold, N. Y. 1959. 233 p. $7.50. (2815)

Contents: coating fundamentals, general discussion of hot organic coatings, asphalt and related minerals, coal-tar pitch, petroleum waxes, synthetic hydrocarbon resins, cellulose derivatives, animal, vegetable, and insect waxes, miscellaneous products, hot applications without solvent, hot-applied coal tar pitch-base coatings, hot solution applications, tests for hot-applied coatings, and relative importance and trends in hot organic coatings.

RELATIONSHIP BETWEEN STRUCTURE AND PROPERTIES OF CRYSTALLINE, HIGH-MELTING POLYHYDROCARBONS. T. W. Campbell and A. C. Haven, Jr. (E. I. du Pont de Nemours & Co.). J. Appl. Polymer Sci. 1: 73-83 (Jan./Feb. 1959). (2816)

Twenty-two alpha-olefin monomers with varying degrees and types of branching in the lateral group were polymerized and the polymers characterized. In general, the closer the branching in the side chain is to the polyethylene trunk, the higher the degree of crystallinity and the crystalline melting point. The degree of branching and the symmetry of the branches also affects the melting point and crystallinity markedly. Relationships have been drawn between type and position of the branch and melting point. Tables, 22 refs.

EFFECT OF SPHERULITES ON THE MECHANICAL PROPERTIES OF NYLON 66. H. W. Starkweather, Jr., and R. E. Brooks (E. I. du Pont de Nemours & Co.). J. Appl. Polymer Sci. 1: 236-239 (Mar./Apr. 1959). (2817)

The presence of spherulites in nylon 66 increases the yield point and reduces the effects of variations in percent crystallinity. Decreasing the size of the spherulites through increased nucleation results in a higher flexural modulus and yield point, a lower ultimate elongation, and a loss of ductility. These effects are markedly reduced by raising the temperature or water content. The effects of spherulite size in nylon and grain size in metals such as mild steel are compared. Graphs, tables, 13 refs.

ON THE PHASE STRUCTURE OF CELLULOSE. N. V. Mikhailov (Manmade Fiber Research Inst., Moscow). J. Polymer Sci. 30: 259-269 (1958). (2818)

The results of thermodynamical and structural studies of phase structure of cellulose are found to be in good agreement, permitting the following conclusions: (1) The regenerated cellulose fiber does not change its phase condition and remains amorphous over the whole range of stretching from an isotropic to a highly oriented state. (2) Viscose fibers spun under different conditions have the same phase structure. X-ray diffraction patterns, tables, 7 refs.

Physics G2

STATIC ELECTRICITY IN POLYMERS. PART 1. THEORY AND MEASUREMENT. V. E. Shashoua (E. I. du Pont de Nemours & Co.). J. Polymer Sci. 33: 65-85 (Dec. 1958). (2819)

The Static Propensity Tester was constructed for the measurement of the rate of electrostatic charge build up and decay on polymer films and fabrics. The tester was used for measuring the rates of both positive and negative potentials in the voltage range of 1,000-10,000 volts. A simple test was devised for characterizing the antistatic behavior of polymers. Photo, diagrs, graphs, tables, 11 refs.

FRICTION IN TEXTILES. H. G. Howell, K. W. Mieszkis, and D. Tabor. Butterworths Scientific Pubns in association with The Textile Inst., 10 Blackfriars St., Manchester 3, England. 1959. 263 p. 42 s. (2820)

Contents: Part 1. Theory of friction and lubrication: (1) General mechanism of friction; (2) Friction of plastics and fibers; (3) Mechanism of lubrication. Part 2. Friction in textile processing: (4) Friction of wool; (5) Friction in spinning; (6) Friction in winding; (7) Friction during conversion of yarns into fabrics; (8) Effect of interfiber friction on the strength of tire cord; (9) Friction in fabrics. Part 3. Test methods: (10) Measurement of friction of yarns and fibers; (11) Control and measuring of tension; (12) Measurement of abrasion. Appendix: Some typical values of friction for yarns and fibers.

ELECTRIC NETWORK ANALOG STUDY OF VISCOUS FLOW NORMAL TO PARALLEL, EVENLY SPACED CYLINDERS. J. L. Shearer (Mass. Inst. Technol.). Textile Research J. 29: 467-476 (June 1959). (2821)

In connection with the study of viscous flow of liquids and gases between textile fibers, an electric resistance network analog was employed to solve the Navier-Stokes equations for creeping flow normal to an infinite array of circular cylinders arranged in a hexagonal pattern. The results of the analog study predict flow resistances approximately four times as great as those measured with real packages of fibers. The difference is very likely due to the uneven spacing of fibers in the real case, giving some very large passages which offer relatively little resistance to a significant fraction of the flow. The variation of flow resistance with porosity appears the same, on a percentage basis, for the analog prediction based on equally spaced fibers as for the experimentally measured resistance of real fiber masses which are unequally spaced in a random fashion. Neither the predicted nor measured flow resistance varies with fiber mass porosity in accordance with the Carmen-Kozeny formula which has been successfully applied to flows through granular beds. Photos, diagrs, graphs, table, 14 refs.

STATIC: YOUR PROBLEM? Sheridan Croxted Ltd. Fibres 20: 231-233 (July 1959). (2822)

The causes and nature of static electricity are briefly reviewed, and the use of such products as the Simco static eliminator, neutrostat air gun, Croxtine antistatic spray, and the induction type eliminator is examined. Photos.

INFRARED SPECTROSCOPY OF POLYETHYLENE TEREPHTHALATE. W. W. Daniels and R. E. Kitson (E. I. du Pont de Nemours & Co.). J. Polymer Sci. 33: 161-170 (Dec. 1958). (2823)

The absorption spectra of polyethylene terephthalate, polyethylene-D_4 terephthalate and polyethylene terephthalate-D_4 were investigated. From these spectra and those of other known compounds, assignments were made for most of the bands in the 2 to 15 micron region. The 13.7 μ band was shown to be due to the out-of-plane bending of the aromatic hydrogen. Graphs, tables, 11 refs.

COLOR APTITUDE TEST: ANALYSIS OF SCORES. D. L. Tilleard. J. Oil Col. Chem. Ass. 41, No. 11: 797-806 (1958). Through BCIRA 39: 1755 (1959). (2824)

The scores of over 300 persons taking the I. S. C. C. color aptitude test have been analyzed statistically. The results confirm the value of the test for sorting trainees in color matching.

MISCELLANY H

REEQUIPMENT IN BRITISH COTTON SPINNING MILLS. F. Charnley. Textile Merc. 140: 705, 707-708 (May 29, 1959); 748-749 (June 5, 1959). (2825)

Articles on the future of the Lancashire textile industry. Part 1. Probable course of reequipment at present. Part 2. A glimpse into the future.

INTERNATIONAL PLASTICS EXHIBITION: OLYMPIA, LONDON, JUNE 17-27, 1959. Fibres 20: 234-240 (July 1959). (2826)

THE LOCATION OF THE SYNTHETIC-FIBER INDUSTRY: A CASE STUDY IN REGIONAL ANALYSIS. J. Airov. Published jointly by The Technology Press, Cambridge, Mass., and John Wiley, New York, N. Y. 1959. 203 p. Regional science studies no. 2. $9.75. (2827)

This study has three major objectives. The first is to explain the present location pattern of the synthetic-fiber industry in the United States. The second is to forecast the regional distribution of the industry's future growth in terms of both direct employment and capital investment. The third is to evaluate the advantages of Puerto Rico, a low labor-cost area, as a location for synthetic-fiber production. The term "synthetic fibers" is defined to include only fibers which are manufactured from synthetic polymers.

PROBABILITY OF A CALIFORNIA TEXTILE MILL. A. C. Hall. Am. Dyestuff Reptr. 48: 40-41 (June 29, 1959). (2828)

Summary of survey made by the Mayor's Textile Committee for the Development of the Textile and Apparel Industries, Los Angeles, California.

COMMUNIST CHINA'S COTTON TEXTILE EXPORTS: THEIR GROWTH AND THEIR EFFECT ON WORLD MARKETS. B. M. Hornbeck. U. S. Foreign Agri. Serv., Washington 25, D. C. Apr. 1959. 23 p. FAS-M-52. (2829)

PATENT CHECKLIST

U.S. patents may be obtained from the U.S. Patent Office, Washington, 25, D.C., for 25¢ a copy. Photostatic copies of foreign patents are also available. Charges for these photostats are based on the number of pages in the patent.

FIBERS A

Manmade fibers A2

METHOD AND APPARATUS FOR PRODUCTION OF VISCOSE RAYON STAPLE FIBER. W. H. Bradshaw (to Celanese Corp.). USP 2 892 675, June 30, 1959. (2830)

Continuous apparatus with a spinning section, a stretching section, a cooling section, and a cutting and opening section.

YARN PRODUCTION B

METHOD FOR HANDLING MULTIPLE YARNS. H. B. Kline and E. Levy (to Industrial Rayon Corp.). USP 2 887 843, May 26, 1959. (2831)

Method for treating multiple yarns in the form of a single helix on yarn storage and advancing reels.

FALSE TWIST CRIMPING FOR BULK YARN PRODUCTION. R. A. A. Willens (to Brit. Celanese Ltd). USP 2 890 568, June 16, 1959. (2832)

APPARATUS FOR LIQUID TREATMENT OF VISCOSE RAYON YARNS. A. Pensotti (Italy). USP 2 892 336, June 30, 1959. (2833)

Opening, picking, fiber preparation B1

OPENING MACHINE FOR WET FLEECE OF SYNTHETIC STAPLE FIBER. H. Thiele (to Spinnfaser AG). USP 2 892 219, June 30, 1959. (2834)

Device for opening and fluffing a wet fleece by combined bending and air pressure prior to drying.

Carding and combing B2

LAP ROLL PRESSURE MECHANISM FOR LAPPING MACHINES. J. R. Long and A. C. Flint (to Granite Mach. Co. and Livingston & Haven Inc.). USP 2 890 841, June 16, 1959. (2835)

Drawing and roving B3

SLIVER DRAFTING MECHANISM. G. F. Raper (to T.M.M. (Research) Ltd). USP 2 890 494, June 16, 1959. (2836)

Drafting mechanism with means for detecting and correcting worsted sliver irregularity.

TOP DRAFTING ROLL CARRIER ARM. C. Miesch and B. Baumann (to Soc. Alsacienne de Constructions Mecaniques). USP 2 890 495, June 16, 1959. (2837)

The arm has a longitudinal slideway along which individual supports for the top rolls may be manually shifted and locked into the position desired.

SLIVER EVENER. G. F. Raper (to T.M.M. (Research) Ltd). USP 2 891 287, June 23, 1959. (2838)

Apparatus for detecting and correcting sliver irregularities by means of a relay responsive to a detector located in advance of a drafting unit.

COILER DRIVE. H. P. Jackson (to McDonough Power Equip. Inc.). USP 2 891 412, June 23, 1959. (2839)

The coiler drive assembly may be adjusted so that it can be coupled to the power takeoff of the carding, drawing, or combing machine with which it is associated.

Spinning, winding, twisting B4

TWISTING APPARATUS FOR PLY YARNS. A. W. Vibber. USP Reissue 24 662, June 30, 1959. Original No. 2 732 680, Jan. 31, 1956. (2840)

The speeds of feeding the strands and their tension are synchronized adjacent the point of plying by means incorporated in the flyer.

SPINNING RING. P. F. Grishin, Z. Szaloki, and E. E. H. Zimmermann, Jr. (to Whitin Mach. Works). USP 2 889 679, June 9, 1959. (2841)

The bearing surface along the traveler flange is constructed to provide a greater than usual contact area with the traveler, with a resultant decrease in pressure and heat generation.

SPINNING FRAME PNEUMATIC BROKEN ENDS COLLECTOR. G. Séress. USP 2 890 563, June 16, 1959. (2842)

Cleaning device employing pneumatic tubes and nozzles which may be so positioned that the scavenger roll can be maintained in its normal place but easily removed for cleaning.

TWO-FOR-ONE TWISTER STOP MOTION. J. V. Keith and K. D. Kirkman (to Universal Winding Co.). USP 2 890 564, June 16, 1959. (2843)

Mechanism for stopping the operation of a multiple twist spindle on breakage or exhaustion of the yarn being twisted.

BOBBIN SUPPORT AND DRIVE. W. H. Miller (to Cloverleaf-Freeland Corp.). USP 2 890 566, June 16, 1959. (2844)

The invention relates to a driving connection between the upper end of the spindle support and the underside of the upper end of the bobbin cap.

TWISTING APPARATUS FOR HIGH TORQUE YARNS. N. J. Stoddard and W. A. Seem (to Universal Winding Co.). USP 2 891 376, June 23, 1959. (2845)

Apparatus for imparting a latent torque to yarns by the use of hollow twisting-untwisting spindles which insert and remove the identical amount of twist.

HOPPER-TYPE FEEDER FOR BOBBIN CORES. H. Beckers (to Walter Reiners). USP 2 891 697, June 23, 1959. (2846)

WINDING MANDREL FOR PACKAGING GLASS STRANDS. R. E. Smith (to Owens-Corning Fiberglas Corp.). USP 2 891 798, June 23, 1959. (2847)

Mandrel which supports and expands a resilient winding tube so that no binding occurs between courses of the glass strands being wound on the tube.

BALLOON CONTROL RING ATTACHMENT FOR SPINNING MACHINES. R. R. Cone. USP 2 892 301, June 30, 1959. (2848)

Control ring attachment for enabling larger packages of high quality yarns to be produced at high speeds without interference with normal doffing. The ring is operated in synchronism with the spinning rail from the builder mechanism of the frame.

COMBINED SPINDLE IDLER AND BRAKE MECHANISM. S. Whitehead (to William Kenyon & Sons Inc.). USP 2 892 302, June 30, 1959. (2849)

Mechanism which automatically applies a brake to a spindle simultaneously with the disabling of the spindle by interposition of an associated idler device against the spinning frame driving belt.

Yarns B5

METHOD OF SECURING HEAD AND CAP TO BOBBIN BARRELS. W. H. Miller (to Cloverleaf-Freeland Corp.). USP 2 890 521, June 16, 1959. (2850)

COMPOSITE STRETCH YARN. J. L. Taylor and L. C. Byerly (to Burlington Inds.). USP 2 890 567, June 16, 1959. (2851)

A thermoplastic yarn, e.g. nylon, is plied with untwisted cotton or rayon, subjected to heat treatment, and twisted to form a stretch yarn.

ADJUSTABLE BOBBIN TRUCK. N. W. Eurey (to Excel, Inc.). USP 2 890 891, June 16, 1959. (2852)

The height of the bin-holding frame of the truck may be easily adjusted to make the bobbins more accessible.

FABRIC PRODUCTION C

Warping, slashing, yarn preparation C1

WINDING MACHINE APEX GUIDE ARRANGEMENT. E. J. Wright and N. E. Klein (to Deering Milliken Research Corp.). USP 2 890 565, June 16, 1959. (2853)

The spindle and apex guide are so positioned that the guide may be easily shifted out of the path of the bobbin during doffing and donning.

SIZING POLYESTER YARNS WITH AN ETHYLENE-MALEIC INTERPOLYMER. J. H. Johnson and J. E. Fields (to Monsanto Chem. Co.). USP 2 892 736, June 30, 1959. (2854)

Weaving C2

LOOM DRIVE. E. P. Turner (to Singer Mfg. Co.). USP 2 889 855, June 9, 1959. (2855)

The unitary clutch-brake mechanism makes possible quick cessation of loom operation without undue shock to the loom or the drive.

EXPANSION COMB. L. Kasper (to Steel Heddle Mfg. Co.). USP 2 890 516, June 16, 1959. (2856)

Arrangement for quickly and accurately adjusting the dent spacing.

WEFT NEEDLE CABLE DRIVE FOR AXMINSTER CARPET LOOM. M. C. Brannock (to Fieldcrest Mills). USP 2 890 725, June 16, 1959. (2857)

The cable is driven in a warpwise direction by crank arms mounted directly on the loom power shaft.

LOOM DROP BOX LIFTING LEVER. L. L. Payton. USP 2 892 469, June 30, 1959. (2858)

PICKER STICK MOUNTING. C. R. Kronoff (to Crompton & Knowles Corp.). USP 2 890 726, June 16, 1959. (2859)

Resisting means acting through a lever and link system to hold a yieldable pivotal mounting for a picker stick in normal position during picking while allowing its release to avoid picker stick breakage when an excess force occurs.

LOOM BUFFER. J. G. Chapman. USP 2 890 727, June 16, 1959. (2860)

Structure for cushioning shock absorption at the end of each loom stroke and for reducing wear on the bearings and moving parts of the lay assembly.

SHUTTLELESS RIBBON LOOM. A. L. Jones and E. E. Cuckson (to Cuckson Textiles Proprietary Ltd). USP 2 891 583, June 23, 1959. (2861)

The weft insertion mechanism in addition to inserting the weft also knits one selvage of the fabric.

HOLDING THE WEFT END OF A BOBBIN TO BE INTRODUCED INTO THE SHUTTLE. K. G. E. Corneliusson, L. R. Damm, N. D. Landqvist, B. G. Linnarson, and N. G. Svansson (to Rydboholms AB). USP 2 892 470, June 30, 1959. (2862)

The weft end of a bobbin to be introduced into the shuttle is sucked into the gripping mechanism by subjecting the bobbin surface to a flow of air.

Knitting C3

CIRCULAR MULTI-FEED HOSIERY MACHINE. R. H. Lawson (to Scott & Williams, Inc.). USP 2 890 577, June 16, 1959. (2863)

Mechanism for producing two or three variations in stitches in the same course and for changing the selection from course to course.

SINKER CONTROLLING DEVICE FOR STRAIGHT BAR KNITTING MACHINE. J. Václavík (to Zapadomoravske Strojirny). USP 2 890 578, June 16, 1959. (2864)

The control device imparts a rearward movement jointly to all the sinkers and dividers in the direction corresponding to the movement of their butts away from the sinker head.

ORNAMENTED RIB KNIT FABRICS. E. E. Klahr and G. R. Stafford (to Camp & McInnes, Inc.). USP 2 892 330, June 30, 1959. (2865)

Ornamentation formed by tuck stitches more prominent in their effect than is usual.

WARP KNITTING MACHINE FOR PRODUCING CUT PILE FABRIC. W. J. Kelly (to Mohasco Inds.). USP 2 892 331, June 30, 1959. (2866)

Device for holding weft pile loops as they are formed and for severing them one at a time to convert each loop into a pair of pile tuft legs.

AUTOMATIC HOSIERY INSPECTION AND TURNING APPARATUS. G. G. Harralson, Jr. (to Marvel Specialty Co.). USP 2 890 818, June 16, 1959. (2867)

SINKER-RETRIEVING JACK-SPRING MECHANISM FOR FULL-FASHIONED HOSIERY MACHINES. P. F. Kohler and F. K. Kohler. USP 2 892 332, June 30, 1959. (2868)

Device for reducing wear on the sinkers incident to the pushing back of the jacks.

Fabrics C4

NONWOVEN FABRIC OF SUPERPOSED FIBER FLEECES. W. Wacker, F. Guillot, and G. A. Hempel (to Lohmann KG). USP 2 889 583, June 9, 1959. (2869)

FIBER DISPERSION APPARATUS. J. d'A. Clark (to Fibrofelt Corp.). USP 2 890 493, June 16, 1959. (2870)

Apparatus for separating and maintaining fibers in a separated condition by dispersing them in a large volume of air, so that they may be deposited, without further processing, in an interfelted, haphazard arrangement to form nonwoven fabrics, etc.

APPARATUS FOR MAKING GLASS FIBER MATS. S. D. Williams. USP 2 890 496, June 16, 1959. (2871)

FEED MECHANISM FOR FORMING RANDOM FIBER WEBS OF UNIFORM THICKNESS. H. H. Langdon, F. M. Buresh, R. R. Castor, and R. E. Marks (to Curlator Corp.). USP 2 890 497, June 16, 1959. (2872)

CHAIN STITCHED NONWOVEN FABRIC. H. Mauersberger (to VEB Tullmaschinenbau). USP 2 890 579, June 16, 1959. (2873)

The fabric is produced by sewing a pattern of chain stitches into a layer of loose material such as matting or wadding.

WARP KNIT CUT PILE CARPETS. R. S. MacCaffray, Jr. (to C. H. Masland & Sons). USP 2 891 396, June 23, 1959. (2874)

The fabric being knitted is held against the fabric-engaging surfaces of the trick plate of a Raschel machine by the cutting plush points to prevent the fabric from moving forward and damaging the needles as they advance.

WEAVING PATTERNED PILE CARPETS. F. W. E. Hoeselbarth (to C. H. Masland & Sons). USP 2 891 582, June 23, 1959. (2875)

Patterned effects are obtained without the use of jacquard mechanisms by placing two or more pile warps in the same heddle eye and dent, causing rotation by frictional engagement so that a buckling effect is produced.

POLYESTER RESIN BONDED GLASS FABRIC LAMINATES. M. C. Brooks (to U. S. Rubber Co.). USP 2 891 885, June 23, 1959. (2876)

Vinylalkoxysilanes and vinylallyloxysilanes are used for pretreating the glass fabrics to secure improved bonding with polyester resins.

LOOP PILE CARPET. E. C. Bloch and G. Bloch. USP 2 892 471, June 30, 1959. (2877)

A random pattern effect is obtained by feeding contrasting pairs of pile warps through the same reed dent with no attempt to control the relative positions of the loops of each pair.

HIGH SPEED ENDLESS BELT. L. A. Runton (to Russell Mfg. Co.). USP 2 892 748, June 30, 1959. (2878)

The belt is composed of parallel multi-ply cords of prestretched synthetic filaments bonded together by a plastisol.

FINISHING AND CHEMICAL PROCESSING D

Dyeing and printing D2

DYEING OF YARN BEAMS. J. O. K. Walmsley (to Rhoden Dyeing Co. Ltd). BP 810 673, Mar. 18, 1959. Through BCIRA 39: 2120 (1959). (2879)

A yarn beam is wound for dyeing so that the tension on the yarn diminishes linearly from the core to the surface. The unwinding of the supply beam is braked pneumatically, the valve being controlled by a pivoted lever that carries a tensioning roller for the yarn.

PRINTING PASTE. A. H. Berrie and D. K. Lawman (to Imp. Chem. Inds. Ltd). BP 811 046, Mar. 25, 1959. Through BCIRA 39: 2121 (1959). (2880)

Textile printing with leuco sulfuric esters of vat dyes is facilitated by the use in the paste of the N-oxides of certain dialkylaniline-carboxylic or -sulfonic acids. These are prepared by the action on the tertiary amines of hydrogen peroxide, or a peracid that yields this on treatment with water.

PIGMENT BINDER. B. B. Kine and A. C. Nuessle (to Rohm & Haas Co.). USP 2 886 474, May 12, 1959. (2881)

Binder composition for pigments used in textile printing consists of linear polymers of monoethylenically unsaturated monomers which are capable of further reaction to form a cross-linked binder resistant to washing or drycleaning.

DYEING CELLULOSIC MATERIALS WITH BASIC DYES. R. Sause and W. E. Stephen (to Imp. Chem. Inds. Ltd). USP 2 892 674, June 30, 1959. (2882)

Increased affinity for basic dyes is conferred on cellulose fabrics by pretreatment with water-soluble halogeno-1:3:5-triazine derivatives.

CONTINUOUS PROCESS FOR DYEING WOOL OR NYLON WITH ACID DYES. H. R. Mautner (to Gen. Aniline & Film Corp.). USP 2 888 313, May 26, 1959. (2883)

Mechanical processes D3

SAFETY DEVICE FOR SQUEEZE ROLLERS. H. Potter (to Bleachers' Assoc. Ltd). BP 810 962, Mar. 25, 1959. (Addition to BP 749 325). Through BCIRA 39: 2119 (1959). (2884)

In a device for detecting the arrival of minute, projecting fragments (e.g. metal) at a squeeze roller, the sound of the impact against a flexible doctor blade is picked up by a microphone and used, by way of a relay circuit, to serve warning and/or control means. A circuit diagram is given.

FABRIC NAPPING MECHANISM. W. N. Hadley (to Riggs & Lombard, Inc.). USP 2 884 678, May 5, 1959. (2885)

Series of spaced pile and counterpile workers are arranged about an arc of a rotatable cylinder. The fabric is fed only to this arc, and means are provided about another arcuate portion for stripping flock from the napping rolls as the cylinder is rotated.

CONSTANT SPEED WEB WINDING MACHINE. R. L. Bowen, Jr. USP 2 887 280, May 19, 1959. (2886)

Drying, setting, conditioning D4

APPARATUS FOR THE HEAT TREATMENT OF TEXTILES. H. Krantz, W. Krantz, and B. Regenscheit. BP 810 564, Mar. 18, 1959. Through BCIRA 39: 2126 (1959). (2887)

In apparatus of the type in which blowers supply a hot gaseous medium to nozzles directed against both faces of a running fabric, each blower is surrounded by an annular diffusor having an increasing cross-section in the direction of flow. The diffusor comes between the blower and the nozzle chamber that it feeds.

MACHINE FOR HOSIERY PREBOARDING WITH STEAM. G. S. Helliwell (to S. Pegg & Sons Ltd). BP 810 605, Mar. 18, 1959. Summary in BCIRA 39: 2127 (1959). (2888)

SETTING OF PRESSURE CRIMPED SYNTHETIC FIBERS. H. Wegener (to Inventa AG). USP 2 888 733, June 2, 1959. (2889)

A process is claimed for the fixation of pressure crimped polycaprolactam fibers by heat-setting in a crimping chamber without setting agents. A rope of polycaprolactam fibers having a moisture content of 5-10% is fed into a crimping chamber at a speed of 100-250 m/min, generating a hot, moist, setting atmosphere by virtue of the folding of the fibers. The heat generated by the folding of the fibers maintains the crimping chamber at a temperature of approximately 120-130° C.